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The Mississippi Doctor

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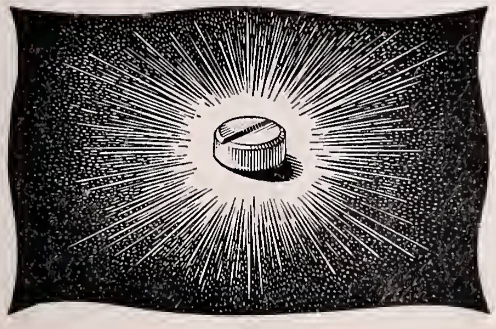

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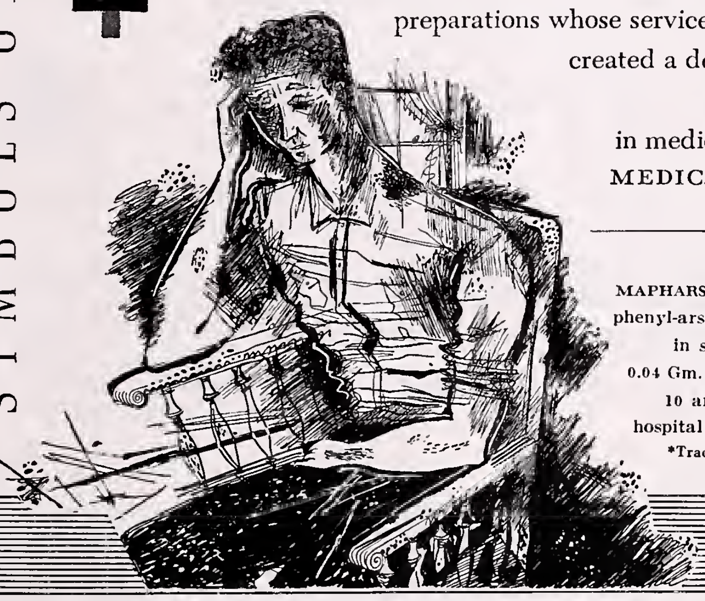

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The Mississippi Doctor

Published monthly at Booneville, Mississippi. Entered as second-class matter, January 19, 1926 at the post office at Booneville, Miss., under the Act of March 3, 1870.

a certain apple falling on a certain Mr. Newton's head proved . . .

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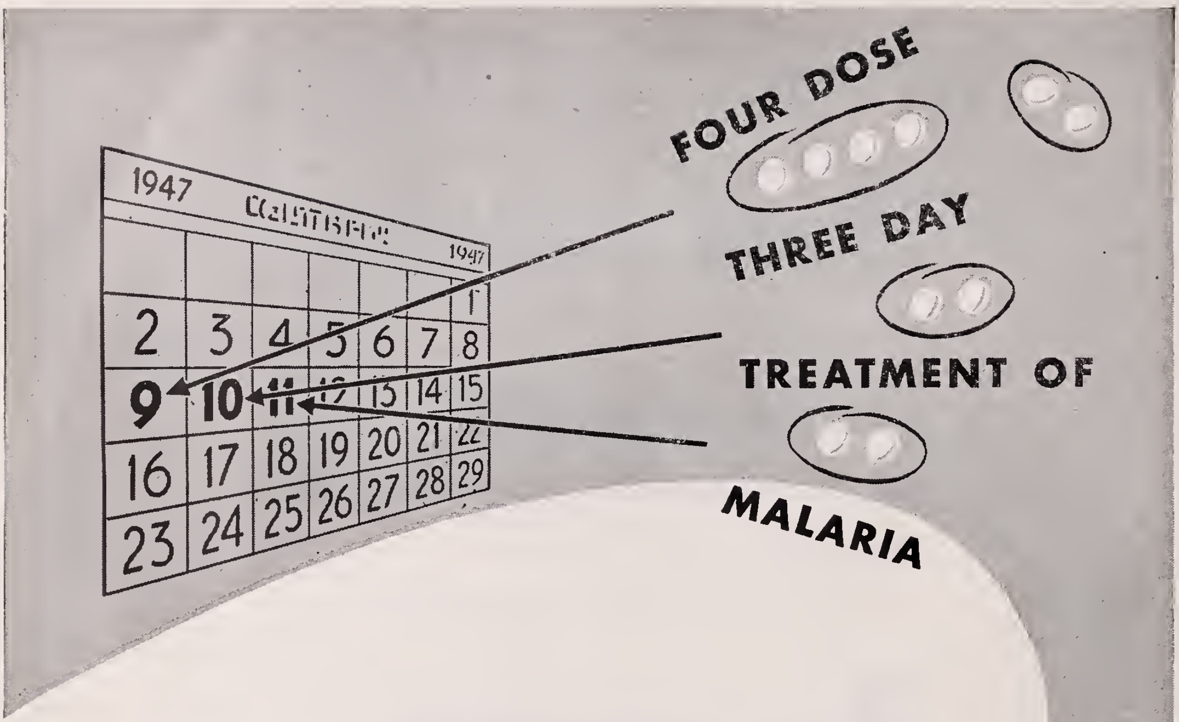

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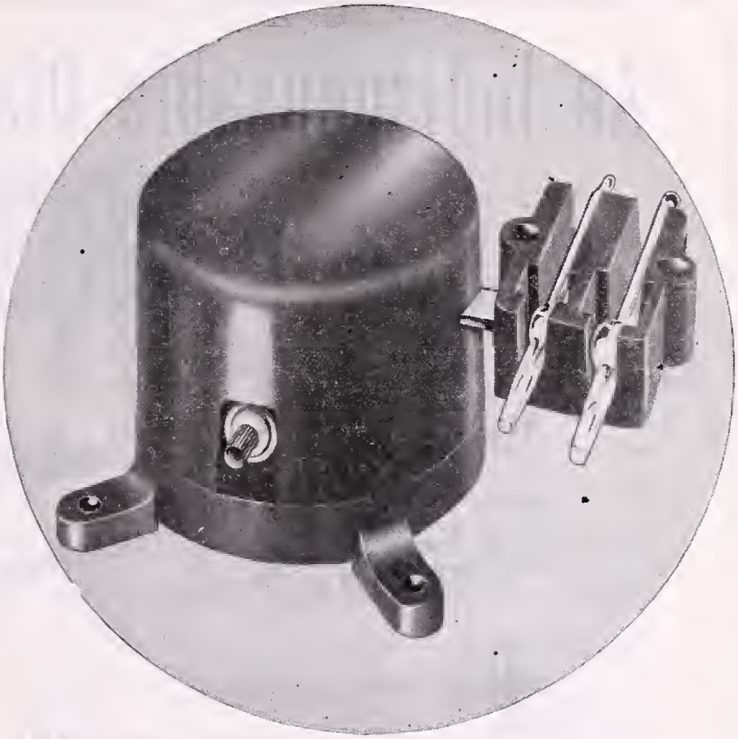

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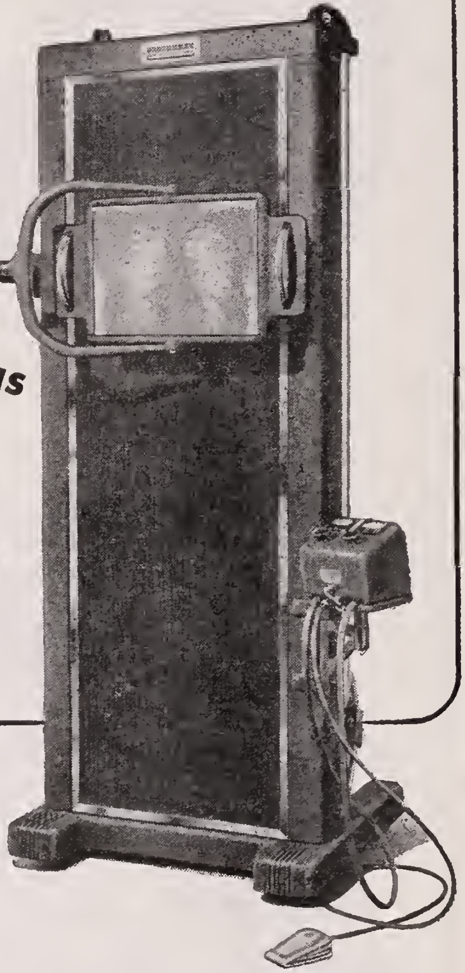

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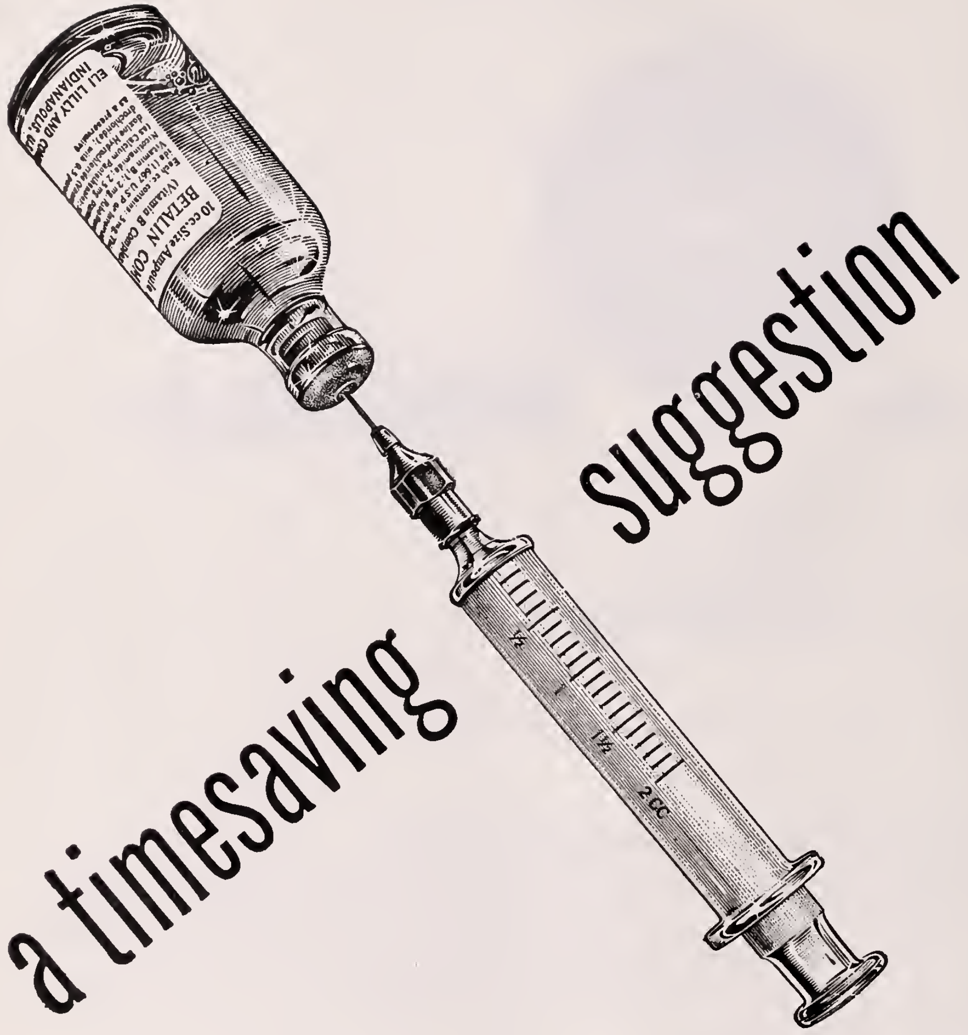

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The Prevention and Treatment of Postpartum Hemorrhage*

Wm. J. DIECKMANN, M.D., V. WILLIGER, M.D., L. D. ODELL, M.D., A. SESKI, M.D.
Chicago, Ill.

HEMORRHAGE CAUSED 30 per cent of the maternal deaths which occurred in the United States in 1944 and 1945. These deaths were either preventable or had preventable factors. It is difficult to determine just how many of the deaths were due to postpartum hemorrhage. Some of the patients do not die from the hemorrhage, but their resistance is lowered to such a degree that they succumb to infection. Pastore stated that the incidence of puerperal infection increased 400 per cent if the hematocrit dropped below 30 per cent. Reports of the Children's Bureau indicate that approximately 20 per cent of the women delivered in the last trimester of pregnancy have a postpartum hemorrhage and of these about 40 per cent die primarily from hemorrhage and shock. A report of the maternal deaths in Philadelphia indicated that over 5 per cent were due to postpartum hemorrhage. Each year a certain number of women die in the city of Chicago from postpartum hemorrhage—deaths which are either preventable or have preventable factors.

Beachman in 1939 stated that in a six-year period in Philadelphia fifty-two women died from postpartum hemorrhage and that 62 per cent of these deaths were considered preventable. He stated, "The usual story was not that of sharp, marked hemorrhage for a few minutes and then sudden death. Rather the picture brought to light by this study was one of steady moderate bleeding over a period of several hours ending in shock and death because no one became alarmed. There was an occasional case where bleeding was sudden and great in volume with the patient going into shock rapidly, but even in such a case there was usually time for adequate treatment." He stated that the average time between delivery and death was 5 hours and twenty minutes and cited this typical case: A physician assisted by a nurse conducted a home delivery with an undelivered placenta; but, since there was no alarming hemorrhage, nothing was done except watchful waiting. Bleeding was described as constant seepage, but it was not until hours after delivery that the patient was admitted to the hospital in shock. Intravenous saline solution and other supportive treatment was administered. No attempt was made to deliver the placenta since the patient was not bleeding a great deal. She died in shock seven hours and forty minutes after delivery apparently without having been transfused and with the placenta still within the uterus. Had the patient had a large blood loss at delivery, the shock would have occurred then and the bleeding would have stopped long enough for clotting to take place in the uterine vessels. Identical cases are occurring each year in the city of Chicago with resulting fatalities.

At a recent meeting of the Chicago Maternal Mortality Committee three deaths from hemorrhage were discussed and all showed preventable factors. The following case resulted in a recommendation from the committee that every hospital with an obstetric service must have a procedure established by which, if the patient's doctor could not be reached in an emergency, some qualified doctor must see the patient within an hour. The baby was delivered at 2 P.M. by a low forceps with a second degree laceration which was repaired. The placenta was delivered normally. One ml. of solution of posterior pituitary was given and at 3 P.M. the patient was in her room with no bleeding and a firm uterus. At 4 P.M. the vulvar pads were markedly saturated and she was given 1 ml. of ergotrate. At 5 P.M. she was still bleeding and her physician could not be reached until 6 P.M., when she was given morphine and another ampoule of ergotrate. She was in shock. Plasma was ordered at 7 P.M., but the interne could not get into a vein. At 7:45 P.M. her physician arrived, but he too was unable to get into a vein. Hypodermoclysis was started, and finally at 8

---

* From the Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-in Hospital

P.M., a vein was exposed and an injection of plasma was started. Bleeding continued. She died at 9 P.M. Autopsy revealed severe generalized anemia of all tissues and an atonic uterus containing about three pounds of clotted blood. This is not an isolated case, and the recommendation of the committee is obvious.

Four per cent of our deaths and 9 per cent of the maternal deaths at the New York Lying-in over a fourteen-year period were due primarily to postpartum hemorrhage. On our service the hemorrhage was an important contributory factor in another 4 per cent. These are preventable deaths.

The causes of postpartum hemorrhage are:

1. Uterine atony—a) incomplete separation of the placenta or retention of a piece; b) overdistention (multiple pregnancy, polyhydramnios, etc.); c) anesthesia and, to a less degree, analgesia; d) prolonged labor; e) tendency for postpartum hemorrhage.

II. Trauma—Duehrssen's incisions or lacerations of the vagina, cervix, or uterus.

III. Abnormal placental site or attachments —a) placenta previa; b) abruptio placenta; c) placenta accreta.

IV. Neoplasms of the uterus—The following case abstract of one of our fatal cases illustrates: a) incomplete separation and retention of a large piece of placenta; b) polyhydramnios; and c) prolonged anesthesia while an interne repaired a third degree laceration. Despite these three separate causes of postpartum hemorrhage, the patient lived eighteen hours and could have been saved by an early manual exploration of the uterus and later by adequate blood transfusion (1000 to 2000 ml.).

S.T. No. 87048—38-year-old, gravida VIII, para VII, at term 9/25/1933.

7-26-33—Registered in clinic. Edema +++ B.P. 112/68, pulse 120. Hb. 10 gm. per cent. Hematocrit 33 per cent, Proteinuria 0. Polyhydramnios.

7-28—Admitted to hospital. B.P. 160/86. Aspirated 4000 cc. amniotic fluid.

8-4, 1 A.M.—Spontaneous delivery of 3105 stillborn monster. Thirty-minute third stage with 1000 ml. hemorrhage. Third degree laceration which was repaired. Transferred to ward.

3:45 A.M.—Thready pulse 120. B.P. 70/56. Shock. Clots from vagina.

4:20 A.M.—Intravenous injection of 700 cc. 20 per cent glucose solution. B.P. 100/70.

5:20 A.M.—Warm and condition markedly improved.

7:00 A.M.—Condition poor. Uterus firm. External heat. Shock. B.P. 100/70.

1:30 P.M.—750 ml. blood transfusion. B.P. 100/74. Pulse 88. Returned to ward.

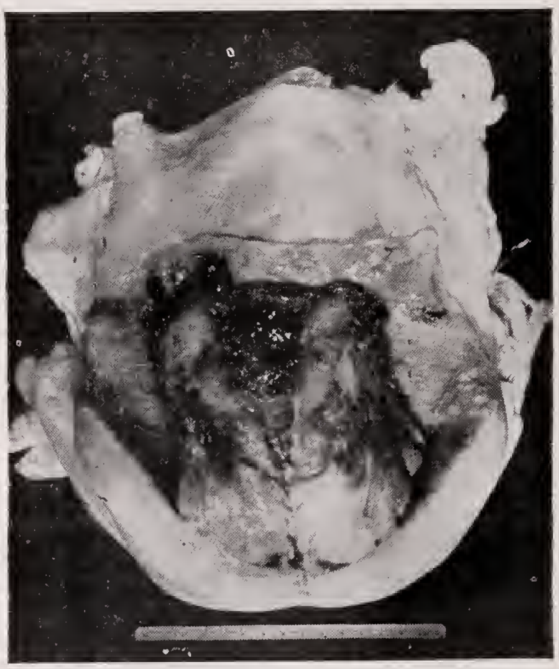
3:00 P.M.—Chill. Pulse 112 and strong.

4:00 P.M.—Pulse 100.

5:30 P.M.—Pulse thready. Air hunger. Cyanotic. B.P.O. Deep shock. No external bleeding. Question of: ruptured uterus, mesenteric thrombosis, coronary thrombosis, pulmonary embolism.

6:30 P.M.—Dead.

Autopsy: Retention of a large piece of placenta (14x5x4 cm.). Figure 1.



Comment: Vaginal bleeding and passage of clots continued for almost eighteen hours but the uterus was never explored. Proper examination of the placenta would have revealed that it was incomplete. Continued uterine hemorrhage demanded manual exploration and blood transfusion in adequate amounts. No blood studies were made. The reason why the resident and senior staff, who were very competent, did not see this patient until an hour before her death has never been given.

Davis stated that on our service, 16 per cent of the cases of fatal postpartum hemorrhage were due to retained placental tissue and 36 per cent to atony (no other demonstrable cause). This latter group is much larger in the non-fatal cases and are of particular concern because a properly conducted second and third stage of labor will prevent almost all of these hemorrhages.

Hemorrhage from the placental site is controlled 1) by the contraction of the uterus (compressing the uterine vessels); 2) by the time the contraction is over, retraction of the muscle bundles has occurred and the vessels are permanently compressed; and 3) by clotting of the blood in these vessels. If there is no retraction—complete loss of muscle tone—bleeding will recur each time that the contraction is over for no uterus can remain in a state of constant contraction.

The anatomical and physiological changes occurring in the uterus in the late second and third stages of labor have been known since 1918, but very little attention has been given to these changes by the clinician. Unfortunately, the authors of our textbooks usually ascribe postpartum hemorrhage to mismanagement of the third stage of labor. Davis and Boynton in 1941 are the first, so far as we know, to state that the proper management of the third stage begins in the late second stage of labor. They stated that, if 0.2 mg. of ergotrate were given intravenously after the delivery of the head or of the anterior shoulder and thirty seconds allowed for its action, in 72 per cent of their cases the placenta had separated and could be expressed within three minutes. They attributed this short third stage to the use of the intravenous ergotrate in the late second stage. However all the evidence at hand indicates that the placenta begins to separate as the baby is born and that it can be expressed usually within one to three minutes after delivery If the woman were in the upright or squatting position, gravity would cause the early delivery of the placenta. With the patient in the supine position external force must be used to expel the placenta.

The so-called Duncan and Schultze methods of placental separation and extrusion from the uterus are only of historical interest and discussion should be omitted from textbooks. The retroplacental hematoma is almost non-existent if the second and third stages are properly conducted, and most obstetricians now know it has nothing to do with placental separation. We have confirmed Royston's statement that if the placenta is extruded through a tight ring (contracted uterus or vaginal orifice) it will almost invaribly be a Duncan and vice versa.

Davis' technic has been the routine on our service up to the present time, but patients still continue to have postpartum hemorrrhage The incidence for 6,638 vaginal deliveries in 1944-46 was 2.5 per cent. Other services have a similar incidence. It is true, as pointed out by Davis, that we rarely have to pack uteri for postpartum hemorrhage since we began using intravenous oxytocics. However, all of us, including Davis, have had patients who despite intravenous injections of ergotrate and/or solution of posterior pituitary continued to bleed from the atonic uterus. Since we still have postpartum hemorrhage due to atony and, it seems to us, a slightly higher incidence of delayed hemorrhage occurring five to twenty days after delivery, we began in 1944 to restudy the conduct of the late second and third stages of labor.

We injected saline, ergotrate and pituitary solutions intravenously at various periods in the terminal phase of the second stage of labor and proved that slow delivery of the fetus was the factor which favored the normal separation of the placenta. Obviously the uterine wall requires some time to readjust itself to the decreasing size of its cavity as the baby is expelled. The final technic was to deliver the anterior shoulder, wait thirty seconds, deliver the posterior shoulder, inject 0.1 ml. (1 unit) solution of posterior pituitary (1 ml. of pituitary or pitocin plus 9 ml. saline solution), with thirty seconds, and then slowly deliver the baby. The cord was held close to the vulva, stripped once towards the baby, and then clamped. The baby was removed and usually the placenta could be expressed without any difficulty. It has required considerable effort to keep the house staff from hurrying the delivery of the baby once the head has been born.

Since most of our patients are anesthetized, the strength and frequency of the uterine contractions, and especially the use of the abdominal muscles are minimal or absent. If the patient is given only gas with each pain and no traction is made on the baby, the total time from the delivery of the head to the complete expulsion of the baby is 4½ minutes in multiparae. The average slow delivery time for primiparae under anesthesia in 3½ minutes with the technic described.

The doctor must watch the uterus closely and as soon as Calkin's sign is present—persistence of a globular uterus—the placenta is expressed by the Pastore technic with slight traction on the cord once the placenta is in the vagina. If one waits too long, the muscular portion of the uterus may contract about a portion of the placenta and make the expression difficult. If this happens, the placenta which is almost always protruding into the upper vagina, can be grasped with the sterile gloved hand and gently extracted. All placentae are removed manually, if necessary, at the end of one hour maximum and usually within fifteen minutes. If there is hemorrhage, the placenta is expressed or removed manually at once.

In over 600 cases the length of the third stage was three minutes or less in 90 per cent to 92 per cent and less than nine minutes in 98 per cent.

Our data indicates that where an oxytocic was used in the late second stage of labor, the incidence of hemorrhage amounting to 300 ml. or more with and after the placenta was very definitely decreased and postpartum hemorrhage, that is, 500 ml. or more was practically eliminated.

Davis and Boynton reported in 1941 that the incidence of postpartum hemorrhage in 753 patients who received no oxytocic in the second stage was 2.0 per cent as compared with 0.4 per cent in 1,020 patients who were given 0.2 mg. ergotrate intravenously with the anterior shoulder. This technic has been followed but the incidence of hemorrhage was 2.5 per cent in 1944-46. Pastore has defined postpartum hemorrhage as a blood loss amounting to 1 per cent or more of the body weight. Our criteria has always been 500 ml. or more, and we believe all blood losses of 300 ml. or more are abnormal. During the last six months of 1946, 1,159 patients were delivered by the resident staff, using one unit of pituitary with the posterior shoulder, and the incidence of postpartum hemorrhage was 0.35 per cent as compared with 1.36 per cent in 664 patients delivered by the staff obstetricians with Davis' technic. Obviously the figures are similar to those obtained by Davis in 1941. Whether the decrease is again due to the special emphasis on the third stage or whether solution of posterior pituitary solution with the posterior shoulder is responsible, can only be determined by a larger series. We believe that intravenous injections of pituitary are much more efficacious in producing uterine contractions than ergotrate but the latter has a longer action.

The senior author has had over twenty-six years' experience with pituitary solution and the only deaths caused by the drug were due to uterine rupture. One patient was highly sensitive. He has been advocating manual removal of the placenta as a teaching procedure for many years; and during the past six months, there were eighty manual removals of the placenta and twelve explorations of the uterus—in comparison, in a same period a year ago there were eighteen manual removals and two explorations. The majority in the former period were for teaching purposes. The morbidity was not increased. We believe that the only way one can learn how to remove the placenta manually is to do it in normal cases under supervision. If doctors would learn this procedure, they would not be removing omentum and intestine mistakenly for placenta. They would also be able to recognize the rare case of adherent placenta, inversion of the uterus, incomplete rupture of the uterus, and myomas within the uterus.

Daily and I reported in 1935 that the average total blood loss (episiotomy plus uterine) was 342 ml. Odell and Seskit in a study on our service found that the average blood loss from an episiotomy was 253 ml. They found an average blood loss per minute of 16 to 57 ml. per minute with a total blood loss of 28 to 339 ml. just from the episiotomy. Our data indicate that most patients lose approximately 50 cc. with the placenta and 129 cc. after the delivery of the placenta; and, if there has been an episiotomy or extensive laceration, an additional 250 ml. or more, making a total of approximately 430 ml. or more of blood in presumably normal deliveries (episiotomy). The pregnant woman does not have an extra supply of blood which will permit her to bleed excessively at delivery. The withdrawal by venesection of 500 ml. of blood from pregnant patients can be detected by changes in the blood within five minutes; and within twenty-four hours each patient showed an appreciable drop in hemoglobin, hematocrit, and serum protein concentration. If either placental or episiotomy bleeding is slightly excessive, the total blood loss at delivery will be well over 500 ml. of blood. Blood loss is always underestimated.

If the placenta has been delivered intact and yet bleeding still continues from the uterus, the following treatment is indicated:

1. Repeat the intravenous injection of ergotrate or pituitary.

2. Explore the uterus manually for an accessory lobe and to exclude rupture.

3. Briskly massage the uterus through the abdominal wall.

4. Pack the uterus if bleeding continues despite 1, 2, and 3. This systematic treatment will control uterine bleeding from atony in almost 100 per cent of the cases.

During and after the period of hemorrhage the patient must be given saline solution, 1000 ml. to 2000 ml. by hypodermoclysis and blood in amounts more than sufficient to replace what was lost (minimum 1000 ml.), which is always underestimated.

Serum, plasma, 20 per cent glucose, and saline solutions, are only stop-gaps until blood is available. If 500 ml. of any of these solutions are injected intravenously, the blood pressure will increase and the patient improve but the injection must not be repeated unless blood is also given. In those rare cases where the pack and the oxytocic fail to control the hemorrhage, then either the uterine arteries must be ligated vaginally according to the technic of Kerwin, clamped, or the uterus removed by abdominal or vaginal hysterectomy. In general, it can be removed by laparotomy more rapidly by the average operator. Hysterectomy is very rarely indicated. In 15½ years. only two uteri were removed in normal patients because of atony and probably only one was absolutely necessary.

Three of our patients (two had an abruptic placenta) resembled purpura in that there were hemorrhages not only from the uterus but also from incisions, needle punctures and any site of injury. The plasma fibrinogen was very low in two and absent in one. Large transfusions of citrate blood are necessary to treat the shock, but 300 to 500 ml. of fresh unmodified blood must also be transfused by some method (syringe cannula) to cure the bleeding tendency.

There is one potential danger from blood transfusions; namely, an incompatibility, resulting in transfusion nephritis with oliguria, anuria, and uremia, and in most instances death. Careful technic in cross matching, especially using the test tube macroscopic method, will decrease the possibility of incompatible blood but not absolutely prevent it. If O group Rh negative cells suspended in pooled serum could be made available in all institutions with obstetric services, the danger of an incompatibility would be eliminated.

Kramer and I reported our results in the treatment of uremia due to anuria. We stated that patients should be given nothing by mouth and no parenteral electrolyte solutions. Intravenous injections of 20 per cent to 50 per cent glucose solutions in water, giving 200 (50 per cent) to 1000 ml. (20 per cent) amounts two to four times daily would produce a secretion of urine and give the highest recovery rate. The amount of glucose solution should not exceed the urinary output by more than 50 per cent. We advised early alkalinization of the urine.

Since 1943 we alkalinize the urine in all patients who are given a medical transfusion by giving 4 gms. of sodium bicarbonate every two hours for a total of eighteen hours, beginning twelve hours before the time of transfusion. All patients requiring transfusions must have the urine measured for forty-eight hours after transfusion and, if there is any hemoglobinemia or hemoglobinuria or any question about the compatibility of the blood, the patient is given 200 cc. of molar sodium lactate, diluted to 2000 cc. with 5 per cent glucose, intravenously and 1000 cc. of a similar solution by clysis. The urine must be kept alkaline to brom cresol purple for twenty-four hours. Two of our patients were given incompatible blood in 1943 and, although we were able with these solutions to maintain a urinary output, there was still some retention of nitrogen. However, both patients recovered, although one was left with very definitely impaired kidneys.

We had four postpartum hemorrhage deaths in the period 1931-42 and none since. Other maternity services have similar mortalities. The importance of early uterine exploration and the early transfusion of adequate amounts of blood have caused the marked decrease in deaths due to this dread condition. A death from postpartum hemorrhage is a serious indictment of the doctor's ability and the hospital's administration.

SUMMARY

The baby should be delivered in stages with a thirty- to sixty-second pause after the delivery of each shoulder—requiring a total of at least three minutes. The placenta has usually separated within one minute. After the fetus has been expelled and as soon as the uterus retains its globular form, it should be compressed but not pushed into the pelvis. When the placenta is in the vagina, it should be extracted by pulling on the cord. An intra-

venous injection of 0.1 ml. unit) of solution of posterior pituitary or 0.2 to 0.4 mg. ergotrate may be injected intravenously after the posterior shoulder if the doctor is experienced; if not, then after the delivery of the placenta.

If the placenta cannot be delivered and there is no bleeding, one may wait at a maximum one hour; but all retained placentae should be manually removed at the end of that time. Uterine hemorrhage is treated by immediate removal of the placenta, manual if necessary or after the third stage by manual palpation of the uterine cavity and visual inspection of the vagina and cervix. One of the above oxytocics should be injected intravenously and if the bleeding continues, the uterus must be packed. At least 1000 ml. of blood and more, if necessary, must be given at once. Periodic hemoglobin or hematocrit determinations must be made.

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Figure 1. Postpartum uterus with large piece of placental tissue still attached to fundus of uterus.

Comments on Medical Education*

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A few years ago it was my privilege to hear Dr. Rudolph Matas, Professor Emeritus of Surgery at Tulane, speak at a ceremony in his honor. Among other things, he said in effect that whatever success he had had was due primarily to the gift by his parents of a healthy body. There is much food for thought in this. Throughout the ages men and women have had at times made significant contributions to the sum total of knowledge despite, sometimes because of, severe bodily handicaps, but these instances are exceptions to the rule that a healthy body is prime prerequisite to outstanding accomplishments. Since this is the case, it follows that there never has been nor can there ever be a more important line of human endeavor than that of the physician. Surely, then, all of us, physicians and public alike, whether or not engaged in teaching, can profitably give some time and thought to the education of the important individual—the doctor.

Within the lifetime of many now practicing medicine there have been startling changes in medical education in this country. Through the splendid activities of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association proprietary schools of medicine grew rapidly less numerous and finally disappeared; the length of the course leading to the M.D. degree was extended to four years; first a high school education and then a minimum of two years or sixty semester hours of college training were made prerequisites to the study of medicine; and minimum curriculum content was prescribed. A school of medicine, in order to be recognized by the accrediting bodies, was required to meet certain minimum standards—and then medical education was on a stable base and progress began. In glancing back over the years, it seems quite apparent that no slightest difficulty was experienced in making the schools live up to the minimum requirements as to the content of the curriculum. On the contrary, each year something was added for the students to acquire. Soon departmentalization became more and more sharply defined with consequent insatiable quest by each department for more and more hours in the schedule for its own presentations. Along with specialization in practice, which was growing apace, this movement led to division of the classes of medical students into sections and assignment of each section to a subject. Whereas forty years ago first-year medical students began with the study of anatomy, they at the same time saw patients in the wards or clinics of the hospitals; and, in the later years, they studied several subjects concurrently. Now anatomy, biochemistry and physiology are disposed of in the first year without patient contact, and in the second year patient contacts are little more than perfunctory while basic pathology, bacteriology and pharmacology are covered. In the third and fourth—the so-called clinical years—the sections of students are assigned in rotation for periods from four to six weeks to the various departments, specializing, as it were, for a few weeks in medicine, surgery, obstetrics, pediatrics, etc. In the earlier years the student not unnaturally thought of himself as in preclinical medicine. He finished each subject in turn with no clinical application on which to hang his knowledge, passed the examination and, all too frequently, dropped his knowledge with the examination paper into the waste paper basket. Now in the upper years he finishes each branch of medicine, takes an examination, and next day dismisses the subject to start becoming a specialist in another field, all too frequently having had a very little application of basic science to his clinical instruction. Each year brings an accretion of knowledge in each branch, and in many years new branches are proposed for addition to the curriculum. The physician who died forty years ago suddenly brought back to practice today would be nonplussed by our talk of vitamins, endocrines, the sulfa drugs, the antibodies and massive irradiation for the treatment of malignancy; and now comes demand for physical medicine, more psychiatry, more preventive medicine and public health, medical ethics, medical economics, legal medicine, and so on. The questions arise: Are we approaching the saturation point? Have we reached it? Have we passed it? Are we not bound to pass it sooner or later if we have not already done so? Since physicians find the field of medical practice so broad that they must confine their efforts to very narrow corners of the field, can we go on for all time adding to the undergraduate curriculum and expect to find minds capable of absorbing the knowledge? Surely the answer to the last question is apparent! It seems apparent also that we must stop adding to the curriculum, or we must lengthen the scholastic year, or increase the number of years of training, or we must find some readjustment of our medical educational program.

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The reasons given for not lengthening the scholastic year have never made any impression on me. If a needy student works during a long summer vacation for excellent pay and saves conscientiously, he can come back to school in the fall with maybe $200.00 to his credit. This is almost insignificant in relation to his needs. It is inconceivable that medical students—young adult American men and women—need twelve to fourteen weeks of vacation between the first and second, the second and third and the third and fourth years of medical school; but suddenly at the end of the fourth year can forego vacationing and continue to do so for the next many years of internship, residency, and the practice of medicine. Certainly a day at Thanksgiving, a week at Christmas and three or four days at Easter, with a summer vacation of six weeks, is a total of sufficient holiday, thus making it safely and sanely possible to have a scholastic year of forty-four instead of the usual thirty-three weeks. But not for the purpose of adding to the content of the curriculum, as I see it. On the contrary, I believe it imperative to reduce sharply the total content of what might be called the pre-M.D. curriculum.

The return of young men to premedicine and medicine after years spent in the armed forces has brought into sharp outline the often noted fact that older and more mature men are usually better medical students. This is frequently offered as an argument for increasing the number of years to take care of the great increase in medical knowledge. By the same token all medical students should be compelled to marry since as a rule married students are better scholars. But the economic, sociologic and biologic factors in this situation must not be overlooked.

Tuition charge in medical schools varies greatly; but even where it is comparatively low, it must be supplemented by maintenance, purchase of books and supplies, clothes, and must take into account the possible earnings of a student if he were engaged in gainful occupation instead of attending school. This very naturally aggravates the sociologic implications since it makes marriage impossible for the large majority. This in turn makes for delayed and not infrequently fewer offspring of an intellectual group of citizens, with increased possibility of lifelong bachelorhood. Most of the biologic implications are all too plain, though no one can accurately measure the results of major repressions. Dependence on parent or guardian for support too far into adult life can of itself produce an undesirable reaction. There are already far too many quite willing, perhaps eager, to hitch-hike their way through life without encouraging such an attitude on the part of the intellectual and usually industrious.

No one would expect medical education to escape the effect of the serious decrease in the purchasing power of the dollar—the high cost of living. As a matter of fact, few of our institutions have more severely felt the impact of the present inflation. Not only have salaries, wages and the cost of supplies and equipment advanced sharply, but legislatures have been slow to increase allotments to state schools, and rate of endowment income of private schools has fallen far below pre-war levels. It behooves us all, public and physicians alike, to recognize the imminent danger to American medical education and to urge on our senators and representatives and on our philanthropic friends and organizations the generous subsidy of this most important factor in our present day life.

Critics never expect to be popular, but the critic who would undo a long accepted order without suggesting a remedy or substitute must expect to receive less attention than the merit of his criticism might warrant. It seems only fair at this point to state that what follows is my personal opinion. I know of several of my colleagues who sharply disagree with me.

It seems perfectly apparent to me that we are considerably past the saturation point in the curriculum. This statement is substantiated by the fact that so few medical students in the upper years can recall and apply even essentials of the basic sciences studied earlier. The vast array of factual information which they must acquire forces them to learn only for the day, as it were, and tomorrow much too much of it is gone. I believe firmly that they would retain a larger total if given less, particularly if information supplied were tied to something real—a patient, a clinical problem or even a mere person. And so I would have student-patient contact moved back to the first year of medicine, as it was forty years ago; and I would have the basic sciences applied daily in the upper as well as the earlier years. Because this would bring about the teaching of basic science throughout the four years, much less factual information could and should be required in the so-called preclinical years.

No properly informed person supposes for a moment that the practice of medicine is taught in the medical school, for there only the foundation is laid on which knowledge of the practice of medicine is to be built. And yet the first year after graduation—the most fertile year of all—the intern year—is nearly everywhere the most neglected. Much of the teaching now crowded into the four years of medicine could be put into the period immediately following graduation. The terrific strain of the violently accelerated wartime schedule has made most of us intolerant of any suggestion of acceleration of any kind. but I do not hesitate to make the approach. And, too, despite the agitation for breadth of education for the prospective doctor(to which I subscribe) I would approve the saving of a year before entrance to medical school. This could be accomplished by a four-year program after completion of the tenth grade, instead of the five years now required.

There is of necessity much left unsaid in this presentation. Details would be long, tedious and uninteresting to you. And so without more ado I submit the following plan, a radical departure from the traditional and therefore heretic, I suspect, no matter how little or how much of merit it may possess.

I. Reduce considerably the hours devoted to each branch taught in the four years of pre-M.D. medicine.

II. Introduce clinical contacts early in the freshman or first year.

III. Continue basic science — applied — throughout the so-called clinical—that is, the third and fourth years, and lengthen each block.

IV. Between the first Monday of September and July 15 give the thirty-three weeks of first year medicine and the first eleven weeks of second year medicine, with two weeks total of holidays, then a summer vacation of six weeks; in the second year, give the remaining twenty-two weeks of second year medicine and the first twenty-two weeks of third year medicine; and in the third and final pre-M.D. year give the remaining eleven weeks of third year and the entire thirty-three weeks of fourth or senior year medicine.

V. Two full years of internship with rotation through only five great branches: Medicine, Obstetrics, Neuropsychiatry, Pediatrics and Surgery. (Dr. O'Brien, of Minneapolis, deserves credit, so far as I know, for suggesting that interns confine themselves to these topics).

VI. Finally, interns to be subjected to organized and supervised instruction, with or without examinations, before certification by the hospital.

Such a program would, I believe, produce the time-honored and badly needed general practitioner while at the same time preparing adequately for specialization those who plan to go on into residencies or fellowships. Furthermore, a long step forward would be made toward a better distribution of medical care because there would be fewer young physicians looking to specialization because of complete satisfaction in the general training obtained. And since the year added in the post-M.D. training is saved by having three instead of four years in the pre-M.D. period no added time is necessary. I believe that any specialty board would accept such a second year of internship as a first year of residency.

And now a very few words in conclusion. I do not apologize for having brought this subject to a mixed audience for I believe that it touches the very foundation of our American life and so should be at least not unfamiliar to every intelligent man and woman. And I am very grateful to most of you for not having looked too frequently at your watches.

The Present Day Concepts of Cancer and Its Treatment*

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CANCER HAS been defined as a biological variation in which the cells have acquired a high power of development and multiplication but have lost the power of contact, and I may add the loss of useful function.

The earliest records of this disease date back to 1500 B.C., but its distribution throughout the human body has not, because of lack of accurate diagnostic methods, been fully appreciated until the development and refinement of various laboratory aids, particularly the x-ray during the past fifteen or twenty years.

As regards the incidence of cancer it now occupies next to the highest place as a cause of death. Last year there were approximately 186,000 deaths from cancer in the United States and it has been estimated that there are about 600,000 cancer patients at the present time.

The question naturally arises as to whether cancer is on the increase or not. At first glance such appears to be the case. However, there are two factors which have to be taken into consideration in looking at this question. The first is that the span of man's life has increased by about twenty-five years and therefore more people reach that period in life known as the cancer age or the period when one is most likely to develop this disease, that is, after forty years of age.

The second factor is that of improvement in methods of diagnosis. Ten years ago cancer of the lung was a rarity, now it ranks among the highest, and yet I do not believe that there has been any increase in the incidence; we have only learned better to recognize it. This is due almost entirely to improvements in x-ray technique and the ability to diagnose it. The same applies to cancer of the gastro-intestinal tract.

The occurrence of cancer is influenced by many factors. Nutrition is thought by some investigators to play a role in its occurrence but this has never been definitely proved. Undoubtedly sex does affect the involvement of certain organs. Only about 2 per cent of cancer of the breast occur in the male sex. This is due mainly to the influence of hormones. It at one time was thought that race played an important role but we believe that it has been conclusively proved that this is not the case except that it has been our observation that the darker skin races rarely have epitheliomas of the skin although the mucous membranes of these races are just as subject to malignant changes are those of other races. All races are subject to cancer and on the whole it is no respecter of persons or races.

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*Presented before the Washington County Health Unit, Grenada, Miss.

As stated, after forty begins the cancer age and age has a marked influence upon the development of all forms of cancer. The highest death rate from cancer of the breast is from forty-five to sixty-five years, cancer of the prostate after sixty years, epithelioma of the skin after fifty years, of the gastro-intestinal tract after fifty years of age.

Functional activity of an organ appears to play an important role. A higher percentage of women who have never borne children develop cancer of the breast than do those who have borne children.

It has long been recognized that various forms of irritation play an important role in the pathogenesis of cancer. Chemical irritants such as are found in epitheliomas of the hands of briquet workers in England, and cancer of the scrotum in chimney sweeps. Coal tar has long been known as a carcinogenic agent and it has been proved that all hydrocarbons which possess carcinogenic properties contain a phenanthrene group.

Heat as an irritant is a well-known cause. Irritation from active rays of the sun or x-rays are well-known as causes. Cancer of the breast we believe is often initiated by trauma, by functional overactivity, inflammation or a combination of these factors. Functional disorders of the endocrine system play an important role in the development of precancerous lesions such as chronic cystic mastitis and ultimately in the development of cancer of the breast.

There have been and are being carried out today more investigations along this line than any other because of the fact that mice lend themselves to this type of investigation better than other animals. They have been inbred to such an extent that certain strains have been developed in which 80 per cent ultimately develop cancer of the breast while other strains are notably cancer resistant. In one strain heredity has been shown to play an all-important part. With this strain it has been possible to cause carcinoma at will by the injection of estrogens. It has been clearly shown that so far as mice are concerned there are three factors involved in the causation of cancer of the breast: 1) an inherited susceptibility, 2) hormone stimulation, and 3) an active agent that is generally transmitted through the milk. At first it was not known what this third factor was until Biltner found that if baby mice were never allowed to nurse the mother they were practically immune to cancer, but if allowed to nurse only one time they were rendered susceptible to cancer for life. We cannot of course draw an analogy from this applicable to the human being, but it certainly opens up further avenues for speculation.

There is no question at the present time that estrogens play an important role in the development of cancer of the breast and chemically all estrogens are closely allied to the carcinogenic coal tar derivatives. I quote, "In all hypotheses one fact remains established, namely, the role of the estrogens in the pathogenesis of adenocarcinoma of the breast. This action is established in certain regions of the mammary gland where the hormone has been retained and has been enabled to exercise its proliferative action on the epithelium over a sufficient period of time to provoke cancer. For one cannot doubt that estrone filters into the glandular formation of the breast. In the human being it is known that colostrum contains a large quantity of estrone and this has likewise been demonstrated in cystic cancerous breasts."

So much for the etiology of cancer. The control and cure of cancer is what is of greatest interest to the physician and the public.

While a person may have inherited predilection for cancer it is primarily a purely local disease and can be eradicated. The cure of cancer depends upon its early recognition. The campaign put on by the American Cancer Society is daily bearing fruit. We are beginning to get these cases even on the day they are first noticed, and these can be cured.

The recognition of cancer in its early stages is, as said above, all important. Symptoms vary with the region and with the location, but for it to be recognized early the patient himself must be educated up to what to look for and to be cognizant of the early symptoms of the disease. For instance, an indolent ulcer in the mouth is always suspicious. An ulcer of the lip that does not heal should be biopsied, skin lesions which are intractible to local treatment should be looked upon with suspicion. Abnormal changes of any kind—from the bowel, the rectum, the bladder or vagina always bear investigation. The earliest symptom of cancer in most of these locations is blood—particularly if it is at the menopausal age in a woman, or in a man beyond fifty years of age it is always a danger signal and one which one cannot afford to ignore. While this symptom does not necessarily mean cancer it does mean that a careful examination should be instituted. The same applies to abnormal vaginal flow of any kind. Changes in one's habits of elimination, particularly occurring in the latter period of life, are sufficient to arouse suspicion. Indigestion, bloody vomitus, or coffee ground vomitus, pain after eating, should make one suspicious of the possibility of cancer of the stomach. Difficult digestion, inability to swallow easily, eructations of food before it reaches the stomach all are suggestive of a lesion of the esophagus. Expectoration of bloody sputum, loss of weight, does not have to mean tuberculosis but can just as easily be significant of cancer of the lung. A lump in the breast should never be ignored. The leading authorities claim that 60 per cent of all breast tumors are cancerous. Over a period of twenty-five years we have biopsied every breast tumor that we have seen and our records do not show as high a percentage of breast tumors as this in all breast lesions. However, the breast is one organ of the body about which there has been more investigation made as to the etiology of cancer and from which we have gained much knowledge of cancer in general from these investigations. The main thing, however, is that the public should be cognizant of these early symptoms, which should be investigated. When cancer is found in its early stages it is always a local disease and can be eradicated.

At the present time there are five means of treating cancer—surgery, x-ray, radium, the cautery, and endocrine preparations. In its early stages and where accessible surgery offers the most in possibility of cure because at that time the condition is purely local, isolated and can be eradicated. Next to surgery in the eradication of cancer locally I would place the actual cautery. This was first introduced in the treatment of cancer before the Christian era, and it has been used to a greater or less extent throughout the ages. Dr. Byrnes of New York in 1879 did a great deal to popularize the treatment of cancer with the actual cautery by the use of red hot soldering irons. At the present time we find an improvement upon this in the Percy cautery in which the principle is exactly the same. Again electrocoagulation by high frequency electric current accomplishes the same purpose. Possibly the agent most used aside from surgery, on account of the usually advanced condition of cancer patients when they present themselves for treatment, is radium or x-ray. There are many malignant conditions that are radio-resistant, particularly if they have a low degree of malignancy and are highly differentiated in regard to their structure. The more malignant types of cancer respond to both radium and x-ray, which are identical in their action, oftentimes with a marked degree of satisfaction. However, we have at times seen patients in whom we thought there were ideal indications for the treatment with these agents in whom the results were disastrous. Instead of controlling the growths they took on renewed activity and the patient rapidly succumbed to the disease. There is no way by which we can determine this before the use of radium or x-ray except that as stated above the highly differentiated growths are usually radio-resistant but our observation has been that even in these cases the use of either one of these agents may not affect the progress of the diseased process.

There has been added to the physician's armamentarium during the past three years one more arrow to his bow and that is the use of endocrine preparations in the treatment of inoperative carcinoma. It has been several years now since it was first discovered that cancer of the prostate responds rapidly to a castration or the removal of the androgens from the system and the administration of stilbestrol or other estrogen hormones. It was thought that in view of the fact that the female hormone had such beneficial effect upon the treatment of cancer of the prostate that possibly the use of the male hormone or testosteron might be of benefit in the treatment of cancer of the breast whether metastatic or local in its character. At the present time, after two years, this is still in the experimental stage. However, the results offer us a hope that we have an agent which will benefit certain of these previously hopeless cases of cancer. Personally we are applying this treatment in all cases of cancer of the breast whether metastatic or not and we have seen some definite improvement incident to its use in a number of recurrent or metastatic cancers of the breast.

At the last meeting of the American College of Surgeons there was presented a paper upon the use of stilbestrol, the synthetic female hormone, which heretofore has been thought to activate cancer of the breast, advocating the treatment of these inoperable metastatic lesions with it. The author of the paper stated that he had given the patients—who had carcinoma which was radio-resistant—stilbestrol in large doses in the hope that he could convert it into a radio-sensitive lesion, and to his surprise the growth gradually faded away after the use of stilbestrol or estrogenic hormone.

We have had one colored patient with inoperable cancer of both breasts which resisted all x-ray treatment but which upon the use of surgery and the administration of stilbestrol had what was apparently complete relief of all symptoms. Another case of metastatic growth in the humerus disappeared with testosteron therapy, and a third with marked recurrence at the site of a radical amputation to disappear with large doses of stilbestrol. A fourth case of recurrence following radical amputation of the breast with massive involvement of the axillary tissues in a growth possibly three inches in diameter with marked supraclavicular involvement of all glands and a metastatic lesion at the umbilicus one and one-half inches in diameter, upon six weeks' treatment with massive doses of stilbestrol, and nothing else, these lesions have practically all disappeared. A fifth case of carcinoma of the liver in a man seventy years of age, confirmed by exploratory laparotomy and biopsy, has shown marked improvement both in diminution in the size of the lesion and improvement in general health.

Besides these we have some thirty-odd cases of carcinoma affecting various organs at present, which are being treated with either stilbestrol or testosteron, upon whom we are keeping close watch.

It is too early yet to call these cures but we are keeping track of them and will keep the administration of the drug up so as ultimately to determine whether or not there is ever a recurrence while under its influence. We have felt that if these endocrine preparations will have a curative effect upon metastatic cancer, that if administered following the removal of the original growth for a sufficiently long time, they should have a preventive effect upon its recurrence. We are using them routinely in all cancers because we cannot but feel that the chemical formulas of the endocrines, particularly the androgens and the estrogens, are so closely allied to certain carcinogenic substances that it is entirely possible for them to be the causative factor in many other cancers than those of the prostate and the breast. Time alone will tell whether we are right in this assumption. In the meantime we have done no harm, and we still have determined whether or not there is a broader field for the use of the hormones besides those originating from the breast or prostate.

Regardless of the location of the lesion, the age of the patient, the race of the individual, there is one fact that always holds good and that is: If we cure cancer we have to see it in its earliest stages, and it behooves all of us who are associated or brought into contact with the public to make ourselves emissaries of the gospel of educating the public as to what cancer is and the necessity for early recognition if it is to be controlled.

While tuberculosis is often stated to be a consequence of poverty, it is in itself a cause of great economic loss. This is a result not only of the very high rates of prevalence which still prevail in many countries but also of the peculiar age selectivity of the disease. It affects men and women in their most productive years, and at ages when they are most likely to have dependents. The immediate loss, therefore, is but part of the picture. The social illness continues long after that of the individual.
TRANS., 1946.

Group Practice of Medicine*

LAWRENCE W. LONG, A.B., M.D., F.A.C.S.
Jackson, Mississippi

GROUP PRACTICE is a coöperative plan of medicine performed by doctors of medicine (and often with doctors of dental surgery) whereby they pool their experience and skill, facilities, equipment, technical and other auxiliary personnel, operating expenses, and their earnings.

Its aims are to improve the quality, quantity and effectiveness of medical service by better organization, supervision and distribution of such services to the patient. It offers better diagnosis, preventive measures, evolution of the psychological and environmental factors with general health supervision and periodic examinations as well as a follow-up plan to the benefit of the patient and the community.

It aims, also, to decommercialize medicine and reduce the cost to the patient by carrying out diagnosis and treatment on the ambulatory patient who formerly was of necessity hospitalized. It meets the challenge to the medical profession of rapid scientific progress and the socio-economic changes that have taken place since the latter part of the nineteenth century, but more effectively since World War I.

We now stand at the crossroads of medicine —we must go forward or be swept on with an eddying current of socialistic types which will and can be met by organized medicine. Group practice is the answer, in my opinion.

There are many group practice units throughout the country which consist of physicians in private practice, industrial corporations, non-profit commercial organizations. universities, unions, and governmental agencies. I am interested in the private practice group and urge its formation throughout our state as an answer to the challenge we face. Joint practice is a similar plan but is not, in my opinion, the answer to what is needed but may be the nucleus from which a group will grow; nor is the loose association of physicians in the same building, or area, who refer patients to each other, although this cooperativeness can be the beginning of an organized group such as is needed to supply the demands of the public.

To establish any organization, foresight, initiative, leadership and long range planning are all necessary. The structure should be balanced with a series of mutually opposed forces with authority divided among persons of equal rank, but there is no place for the autocrat. The group must be congenial and each man must have the attitude of give and take, so that the union will flourish. This is true of matrimony, or any other union. A graduate physician is highly individualistic by background and training and jealously guards his right to practice medicine as he pleases within the limits of medical ethics. Careful consideration must be given, in establishing such an organization, to the following:

1. **Advisability of a group in a given community.** I, personally, believe that group practice is needed, is possible and can be operated in all except the smallest communities in Mississippi where adequate hospitalization is not available. In my opinion, there should be a minimum of 1000 people available per physician in the group and this would mean 2000 people per doctor in the community.

2. **The size of the staff at origin and ultimately.** The size of the staff at origin and ultimately in groups organized in our communities in the state should be well planned and thought out, as it applies to the particular community. I feel that a minimum of three physicians at the outset is the least that can operate efficiently in a group. If complete and comprehensive service is to be rendered as the ultimate aim, then around twelve physicians is the minimum to be ultimately assembled for this job. Of course, the eventual total number might be controlled by both clinical and hospital facilities as well as the purchasing power of the people in the area to be served. If the team is small, the scope of service will, of necessity, be limited. The pitfall of the very large group is depersonalization of the service, assembly-line medicine and ensuing mechanization. For the pa-

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*Read before the Mississippi State Medical Association in its seventy-ninth annual session at Biloxi, Mississippi, May 6, 7 and 8, 1947. From the Surgical Department of the Clinic of Drs. Long, Dees and Edwards.

tient to receive the optimum in quality, efficiency and economy of service, there must be smooth coöperation between the general practitioners, partial specialists and specialists with the general practitioners truly being the family doctors.

3. The financing of the physical facilities and the initial equipment. Once the organization of a group is undertaken, then the procurement and financing of the facilities and equipment becomes necessary, as well as the personnel other than medical. Construction, or conversion of existing buildings, becomes necessary and is obtained by the physicians forming the group. When this is obtained then equipment must be secured that is modern and adequate and can be financed by the group individually, or collectively. An x-ray and clinical laboratory is a must and since the operating costs are shared by the group, it poses no problem and will in most instances pay for the cost of operation of the group. The quality of medical care is improved by group practice and time is saved in referral of patients to several different places. In my opinion, groups should learn from past experiences of other groups that operation of a hospital does not pay and should be separated from the group's clinic. Many of you in the rural communities of Mississippi know that in building your hospital so that you might have a "workshop," as unavoidable as it was, brought you many sleepless nights and often you lost money. But access to a good hospital is vital to the success of the group. The technical personnel are varied and are added as the need for their services arises, consisting of a secretary for administrative and clerical work, nurses, technicians and any other personnel required. This personnel relieves the physician of much technical detail and is not within the reach of the doctor practicing individually.

4. The plan of payment to the group for services rendered. There are several plans of payment to the group for services rendered such as flat rates, fee-for-service and prepayment, but I condemn all except the fee-for-service plan which allows a person the privilege of paying what he is able to pay for a service needed and which would cost him much more if he visited several individual physicians. To quote W. J. Mayo:

> "Properly considered, group medicine is not a financial arrangement except for minor details but a scientific coöperation for the welfare ~~of the sick~~."

Group practice gains in value, as it passes on to the consumer the savings it affords. Shopping around at two to five dollars a throw gets expensive in course of time and it is even more expensive if you do not find out what is wrong with you until it is too late to get well. The convenience to the ill, (or to the well one who is being checked over) of sufficient consultants in one spot to arrive at a final and sensible conclusion is worth a great deal. In my opinion, there is not a town of 5000 people in Mississippi which could not well afford to support a good, sensible and workable group of doctors who would render them better service, cheaper than they are now paying for a similar service.

5. The plan of payment of operation expenses. The payment of operation expenses is simple since it means that the expenses are paid from the treasury made up of the collections coming in to the group. The balance is the amount then which is over and above the operation costs and sinking fund required and is then made available for payment to the members of the group.

6. The method of payment of the members of the group. Many methods are employed in the distribution of the net income to the professional staff. Fixed salaries with the older men and specialists receiving more than the younger men and general practitioners is one plan. Some determine the professional income on the amount of business "brought in," while with others skill and experience is the basis for the division of funds. Other groups have all the staff share in the profits—or losses. Provisions for pay when ill, during vacation and on post-graduate work and attending medical meetings is an easy adjustment. Insurance and retirement benefits can easily be made available. Solo practitioners have long recognized the inequality of fees between the surgeon and the internist, since the patient often appreciates the tangible scar more readily than the intangible healed pneumonia, but in group practice each staff member can be paid out of the common net fund, as stated herein, either a salary, or a predetermined share of the income. In group practice there seems to be an incentive for all members of the group to be on their toes and progress both medically and financially.

CONCLUSION

1. Group practice may have faults, but they are overshadowed by the benefits to the patient and to the doctor.
2. The quality of medical care is generally improved in a group.
3. Group practice is organized medicine's answer to state, or socialized medicine.
4. Mississippi is ideal for the establishment of group practice in its many rural and small urban areas.

Urea-Splitting Organisms*

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Laurel, Mississippi

THE UREA-splitting power of bacteria has been observed in infections of the urinary tract many times, and when encountered, the condition is serious, not only from the standpoint of pathology caused by this ability to split urea, but also due to the fact that treatment of this type is very unsatisfactory.

Probably the reason for the unsatisfactory therapy is that we know so little about the bacteria which possess this power and the enzymes which they excrete. This so-called enzyme is thought to be the factor in breaking down urea. This phenomenon is not only seen in the **Proteus** group, but also in the **Bacillus coli, staphylococcus** and the **streptococcus** groups.

Why other groups of organisms, beside **Proteus,** should take on this characteristic is not known. This does not mean that all bacteria will break down urea, but it has been observed that some strains of bacteria, especially those found in the urinary tract, will perform this feat, while at other times they fail to do it. whether we are dealing with some specific strains which have not yet been isolated and identifed as such, or whether these organisms acquire this power under certain unknown conditions, the writer will not attempt to answer, but will leave that to future investigation.

Knowing that urea-splitting organisms are commonly associated with stones, cultures were made from stones removed surgically from five patients. Three were found to be **Proteus Morganii** and two to be **Escherichia coli communis** in pure culture and all five possessed the power to break down urea upon immediate culturing.

In attempting to investigate this property of the organisms, it was noticed that the media commonly used in the laboratory presented a very complex picture that could not be solved with the facilities at hand. Thus, in trying to solve this, various simple types of media were tried, but these also were found to be unsatisfactory. The complexity of the proteins and amino acids present in the simple media were found to be the reason why the results were not satisfactory and could not be computed, especially those prepared from animal and vegetable products.

In studying the composition of urine, it was noted that all of the amino acids were not present, only the essential ones; dextrose (glucose) was the sugar present and urea present in various nitrogenous forms. So after further elimination, the essential synthetic materials needed for the growth of the two strains mentioned above were found. Growth for a period of ninety-six hours was considered the criterion. The following were found unsatisfactory:

Glucose	10 Gm.
Urea, USP	1 Gm.
Glycine	0.05 Gm.
Pure Distilled Water	100 cc.

The pH of this solution was found to be 7.03 and would remain constant for a period of one month, even when kept at room temperature.

found to be the reason why the results were not satisfactory and could not be computed, especially those prepared from animal and vegetable products.

This solution was sterilized by using the Zeitz filter method.

Of interest was the fact that the presence of ammonia could be detected by putting a piece of litmus paper, held in place by cotton, in the upper part of the tube, thus showing that the organism was breaking down the urea present in the solution during the first forty-eight hours of incubation.

In order to prove that the organisms still retained the ability to break down urea, urea broth devised by the late Dr. Joseph Hume of New Orleans, La., was used as a control type of media. The method used was to transplant a loop from the culture to the control broth, then incubate the broth at 37° C and watch for a change in color from amber to red. The change in color shows that urea is broken down and that the media has become alkaline due to this. This reaction normally takes place in twenty-four hours or less, but during this experiment a forty-eight observation was used. The formula for this media is as follows:

Boullion (infusion)	95 cc.
Phenolphthalein (1%)	1 cc.

Titrate to correct reaction, must be 6.8 or 7.0

Add:

Urea (20% solution)	5 cc.

Sterilize by the fractional method or use the Zeitz filter method. The latter was found to be the most satisfactory. Test for sterility by the usual methods. After this put 5 cc. in each test tube. This broth should be of amber color before inoculating with the suspected organism.

It has also been brought out that Albright and Fuller's solution G and M has been used in treating urea splitting type of infection of the bladder, and the principle back of this was that a solution with the pH of 4.6 was essential to combat the organism, and this buffer type solution was used to lower the pH of bladder urine, thus preventing the organism from breaking down urea and at the same time killing them.

So with this in mind, various types of buffers were tried, and 10/N HC1, 20/N HC1, 40/N HC1, 10/N H_2SO_4 and 20/N H_2SO_4 were not satisfactory. O.1 molecular citric acid (sorensin) was found to be the most satisfactory buffer in that it did not combine with the ingredients of the solution. Then pH's of 5.97, 5.40, 4.60 and 4.00 were obtained by adding this buffer in definite amounts These readings were found to be constant on repeated checks by using the Beckman pH meter.

In using solutions inoculated with **Proteus Morganii**, the following designations are used: M has a pH of 7.03, M1 has a pH of 5.97, M2 has a pH of 5.40, M3 has a pH of 4.60 and M4 has a pH of 4.00. Transplants were made from the cultures at stated intervals to urea broth which were read at twenty-four and forty-eight hours as shown in Chart 1. This chart is the mean results from the three strains of **Proteus Morganii.**

See Chart 1.

Transplants were made from M1, M2, M3, and M4 at the end of forty-eight hours to blood agar plates and agar slants. Growth was obtained from M1 and M2 in twenty-four and forty-eight hours and these strains were found to retain their ability to split urea. No growth was obtained from M3 and M4 at the end of forty-eight hours.

In using solutions inoculated with **Escherichia coli communis,** the following designations are used; C has a pH of 7.03, C1 has a pH of 5.97, C2 has a pH of 5.40, C3 has a pH of of 4.60 and C4 has a pH of 4.00. Transplants were made from the cultures at stated intervals to urea broth which were read at twenty-four and forty-eight hours as shown in Chart 2. This chart is the mean results from the two strains of **Escherichia coli communis.**

See Chart 2.

Transplants were made from C1, C2, C3 and C4 at the end of forty-eight hours to blood agar plates and agar slants and growth was obtained from C1 and C2, but on the inoculation of urea broth with these growths only C1 was able to split urea. No growth was obtained from C3 and C4 at the end of forty-eight hours.

Those in Chart 2 that showed only growth and no urea splitting ability in urea broth were transplants to agar slants and incubated for a period of forty-eight hours and all showed growth. These growths were then inoculated to urea broth only that from C1 at forty-eight hours split urea weakly at twenty-four and forty-eight hours.

After eight days of incubation, the cultures from M and M1 and C and C1 respectively were used to inoculate urea broth and it was noted that the **Proteus Morganii** was still viable and able to split urea, but the **Escherichia coli communis** showed only growth and no ability to split urea. This was repeated after twenty-one days of incubation and **Proteus Morganii** was still able to split urea, but the **Escherichia coli communis** showed no growth.

The conclusions drawn are that the **Proteus Morganii** will grow and remain viable for a period of twenty-one days at a pH of 7.03 and 5.97 when cultured in this solution, and that at a pH of 5.40 after forty-eight hours, it could be revived by transplanting to blood agar plates and agar slants. The **Escherichia coli communis** will only retain its urea splitting ability in a pH of 7.03 for a period of over forty-eight hours and less than eight days when cultured in this solution. Also rejuvenation could only be obtained in a pH of 5.97 at the end of forty-eight hours.

Time and the scarcity of facilities have limited this investigation. This work covers a period of three months.

It is hoped that this can serve as a starting point for someone who wants to do further investigations with urea splitting organisms, and ultimately lead to a satisfactory form of therapy for this type of infection.

The writer is deeply indebted to the members of the Department of Laboratories of Clinical Medicine, Tulane University, New Orleans, La., without whose facilities, patience, and coöperation this work could not have been done.

CHART I
PROTEUS MORGANII
Mean results of three (3) strains

Transplant Intervals in Hours		6		18		24		42		48		Days 8		Days 21	
Urea Broth Reading in Hours		24	48	24	48	24	48	24	48	24	48	24	48	24	48
M	7.03	+	+	+	+	+	+	+	+	+	+	+	+	+	+
M1	5.97	+	+	+	+	+	+	+	+	+	+	+	+	+	+
M2	5.97	+	+	+	+	—	—	—	—	—	—	—			
M3	4.60	+	+	—	—	—	—	—	—	—	—	—			
M4	4.00	+	+	—	—	—	—	—	—	—	—	—			

CHART II
ESCHERICHIA COLI COMMUNIS
Mean results of two (2) strains

Transplant Intervals in Hours		6		18		24		42		48		8 Days		21 Days	
Urea Broth Reading in Hours		24	48	24	48	24	48	24	48	24	48	24	48	24	48
Culture	pH														
C	7.03	+	+	+	+	+	+	+	+	+	+	—	*	—	—
C1	5.97	+	+	+	+	+	+	*	§	*	*	—	—	—	—
C2	5.40	+	+	+	+	*	§	*	*	*	*				
C3	4.60	+	+	*	*	—	—	—	—	—	—				
C4	4.00	+	+	*	*	—	—	—	—	—	—				

§ Weakly, +
* Growth, —

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

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FINE DEMONSTRATION

Dr. Jack Guyton of Johns Hopkins, of Baltimore, spent a few days recently with his father, Dr. B. S. Guyton in Oxford. He spent one day in Corinth operating and consulting with doctors there. While he was in Oxford cases from several states came to see him, and he operated on many special cases. Young Doctor Guyton is very able in the field of ophthalmology and his native state feels a great pride in him. The work he did on this visit is a very significant demonstration of what is to follow in Mississippi and in this nation within a very few years. The consultant is now on his way to the home doctor and the small hospital to insure the rank and file the very best medical service to be found. It is the beginning of a great era in medicine. Its social and economic significance is almost beyond measure. It is the happy solution to what at one time seemed like a problem that would not be solved for years to come. From the standpoint of economy it means the saving of much money and time on the part of the patient; from the standpoint of sociology, it means that our very best people can now remain in the small town and rural community which have almost been depopulated. The specialist and the practitioner will learn one from the other and the people will be served. We commend Dr. Jack Guyton for the fine demonstration of what is to follow when we have our complete hospital system and our four-year medical school.

The great and outstanding medical spirit of Memphis, Dr. E. C. Ellett, is no more. The seventy-seven-year-old eye specialist passed to his reward June 8 in Atlantic City where he had gone to attend the annual meeting of the American Medical Association. He was a native of Memphis and there he had practiced for more than half a century. As an eye specialist he was known around the world. Dr. Ellett was a rather rare combination, brilliant in intellect and highly trained with a heart kind, tender and sympathetic. The people and the profession knew him to love him. In this nation his word was the last word in the field of eye diseases, the great teacher, consultant, and able practitioner. No one thing in the field of medicine was common or of small importance in his estimation. He kept himself mentally and physically fit, that he might be worth more to human society and the medical profession each day that he lived. The medical spirit of Memphis was largely the Ellett spirit. He grew up with the great city of Memphis, helping it to grow, and himself growing ahead of it. "The work we love to do physics pain." He loved medicine so devotedly that its application was no labor to him. We are grateful for the life and the work of Dr. Ellett.

"IN LOVING MEMORY"

"It's a wonderful ailment that I have developed." So spoke the beloved Dr. John Darrington shortly after he had experienced the agony that accompanied the first of the heart attacks that closed his earthly career Monday morning at 3:30 o'clock. Physician that he was, he knew from the inception of his illness that his life span would probably ebb within a few hours.

No fear was in his heart, for he had lived a good Christian life in the service of God and his fellow man.

God had blessed John Darrington with a long, happy and useful life. He had endowed him with a keen mind, and the skilled hands of the surgeon. He possessed attributes of a great man, and as a disciple of Hippocrates he rose to great heights in his chosen profession. He served the poor and the rich when in need of his services, and he was beloved of men and women in all walks of life.

He gave of his time and talents to his city as a public servant, and he gave much to his profession. Last, but not least, he gave his own, his wife, children, his parents, sisters and friends, a deep and lasting love. He attributed much of what he was to his beloved mother, whom he always revered as a remarkable woman. John Darrington will live long in the memory of those who knew and loved him for all that he was.

We love to think of him enjoying the fullness of his heavenly home reunited with his beloved Pauline, now and forever. May his memory be ever green, and when the summons comes to each of us who are left, let us hope and pray that we will be as ready to greet the Savior as was Doctor John.

One could add little to the above from the **Yazoo City Herald**. What a wonderful tribute from one's hometown paper!

When the hour struck and the news spread abroad, we felt that we could hear too, the sad whine of the beagles and the mournful cries of the fox hounds, see tears trickling from the eyes of little children and thousands to whom he has ministered, and find in the faces of doctor comrades a sincere wish for just one more cordial handshake to feel the inspiration of his warm heart. Then we could hear from the skies the glorious reception, with "well done" from the Master he served.

FROM DR. BRYAN

Dr. Darrington was a versatile man, a skilled surgeon, a useful citizen, but his facile wit, his consideration of others, and his kindness of heart really set him apart as a great personality. We extend our kindest sympathy to members of the family.

Dr. John Darrington is dead. He was, indeed, the noblest Roman of them all. He was my friend for forty years. When I yielded to the impulse to write of him and his passing, I found words are entirely inadequate to express the thoughts and sentiments that I entertain concerning him. He was brilliant; he was brave in the truest sense—too brave to entertain deceptive thoughts—hence he never practiced deceit in any form. His philosophy of life was unique. He was a happy man, and he realized that true happiness comes as the result of efforts to make others happy. All people seemed to be drawn to him. He was the very center of any group or crowd in which he might be found. He was an eloquent speaker, never lacking for words, because he never lacked for thoughts and ideas. His home life was beautiful. He and his wife were the most congenial couple I have ever known. His two children, a son and daughter, grew up in an atmosphere of joy and happiness—an inheritance incorruptible that will never fade or fail them. He was a great physician and surgeon, but it was as a **man** that I loved him and shall remember him so long as I retain memory. Although John Darrington will be greatly missed, sadly missed, the world has been greatly enriched by his having lived a long and most useful life among his friends and fellowmen.

G. S. B.

The Mississippi Educational Board is now a year old and it has served well. Recently it published a little booklet, "Doctors to Come" which should be read and studied by everyone. And now comes a report of the first year's work. Dean Pankratz of Ole Miss is chairman of the board. Other members are Drs. Felix J. Underwood, Dr. Paul Gamble (who succeeded Dr. J. K. Avent when he became president of the Mississippi Medical Association), Mr. W. H. Braden, and Mrs. H. H. Ellis. There are sixty awardees under the recent legislative act: thirty-four veterans, six women, seven Negroes, and thirteen others. Eleven different schools are attended by the sixty students. The awardees came from thirty-one of the eighty-two counties, five being the greatest number from any one county, Lee and Sunflower having this number each. The ages of these students range from seventeen to forty-one, the largest groups being twenty-two, twenty-three and twenty-six years.

Under this plan a student is permitted to borrow $1250 per school year or a maximum of $5000 in four years. If the student returns to a rural area and practices after his graduation one-fifth of his total loan is discounted each year, or all of it in five years.

The commission observed many important

facts: 48 per cent of our doctors are sixty years of age or over. Thirteen per cent of our 1385 physicians are listed inactive or partially inactive, 46 per cent are practicing in towns of more than 5000 population although we have only twenty-three of this size. We have 272 incorporated communities of less than five thousand and sixty-four of these have no doctor, forty-four of them have only one doctor, six counties have only one doctor in rural areas. Sixty per cent of our men who studied medicine for the last twenty years never returned to Mississippi. The total gain of doctors from June 1, 1946 to June 1, 1947, was just sixty-one physicians.

For the year 400 applications and inquiries were made to the board from 150 towns of seventy-nine counties of the state. Twenty-three per cent of these were ineligible for different reasons.

Mississippi really needs about 2500 doctors and with only a gain of sixty-one the last year you can see how long it will take almost to double the number we now have.

We wish to extend our congratulations to the Mississippi State Medical Education Board for the fine work it has done. We are very sure our state is now on its way with the very best medical service for its people. Let us continue to go forward.

JANE TODD CRAWFORD STUDENT LOAN FUND IN GYNECOLOGY

The Woman's Auxiliary to the Southern Medical Association has established a Jane Todd Crawford loan fund for young Southern physicians wishing to pursue the study of gynecology. The requirements are simple: he or she must be thirty-two or under, of good character, and showing evidence of being capable of absorbing adequate knowledge.

This would seem to be a rare opportunity, for example, for a bright young resident finishing a service to strengthen the weak spots in his training, or to familiarize himself more fully in tissue pathology, the vaginal and cervical smear cytologic detection of fundal or cervical cancer, irradiation in cancer, the technics of the more radical panhysterectomies for cancer, endocrinology sterility diagnosis and treatment, or intensive review of the anatomy of the pelvis and perineum.

Inquiries may be addressed to Mrs. J. Ullman Reaves, 1862 Government Street, Mobile 18, Alabama.

News and Comment

DR. R. B. CALDWELL

Baldwyn, Miss.

The above is a very good likeness of Dr. R. B. Caldwell of Baldwyn, who was elected president-elect of the Mississippi State Medical Association at its meeting on the Coast May 6, 7, 8. Dr. Caldwell was born June 2, 1886, at New Albany. He received his literary education in the public schools and at Poplar Springs Normal College, his medical education from the Memphis Hospital Medical College, followed by an internship at the St. Joseph Hospital in Memphis.

He located in Baldwyn in 1913 and has practiced general medicine and general surgery there ever since. He has always been active in and a popular exponent of organized medicine. His memberships include the Northeast Mississippi Medical Society, the Mississippi State Medical Association, the Southern Medical Association and the American Medical Association. He is a member of the staff of the Northeast Mississippi Hospital and an associate member of the North Mississippi Community Hospital staff. He owns and operates the Baldwyn Clinic.

He has served as president of the Northeast Mississippi Thirteen Counties Medical Society, has been a member of the council of the Mississippi State Medical Association for thirteen years, and has served two years on the State Board of Health.

Dr. Caldwell was among the very first in the state to advocate a central hospital for our state and the per capita distribution of funds for the indigent sick. He also introduced the resolution in the house of delegates, which gave a favorable response and put the association behind the establishment of a four-year medical school. He is a member of the Baptist Church and the Masonic Lodge.

Dr. Caldwell did his greatest day's work when he married Miss Grace Mathews, one of the finest and most cultured women of north Mississippi. They have two sons, Gene and Wallis, both of whom are in medical school at Ole Miss. The state association looks forward to good leadership during Dr. Caldwell's administration.

FIFTY-YEAR CLUB FULL-FLEDGED GROUP

The Half Century Club with their guests at the State Medical Meeting at Biloxi on June 6, 1947, at the Buena Vista Hotel. Beginning at the left corner of the table and coming to the left, Dr. Rudolph Matas of New Orleans special guest and the speaker of the occasion, Drs. W. L. Little of Wesson, B. J. Marshall of Whitfield, Paul Gamble of Greenville, Felix J. Underwood of Jackson, W. D. Beacham of New Orleans, Harvey Garrison of Jackson, W. W. Crawford of Hattiesburg, John Darrington of Yazoo City, D. S. Pankratz of University, Geo. F. Lull of Chicago, Mrs. W. H. Anderson of Booneville, Dr. T. M. Dye of Clarksdale, Mr. C. P. Loranz of Birmingham, Drs. W. H. Scudder of Mayersville, F. M. Acree of Greenville, J. N. Nichols of Gulfport, and Jeff Anderson of Meridian, J. G. Backstrom of Tutwiler, and G. L. Biles of Sumner; J. Rice Williams of Houston, J. K. Avent of Grenada, and W. H. Anderson of Booneville.

Three years ago, Dr. W. A. Evans of Aberdeen, who spent many years as health commissioner of Chicago and wrote the syndicated "How to Keep Well" column for several large dailies, and who has been in the practice for a bit over sixty-two years, advanced the idea of a Half Century Club here in Mississippi.

Dr. Evans is nationally and internationally known, is a member of the Fifty-Year Club Illinois, but since returning to his old home in Aberdeen has turned his interests heartily to medical affairs in Mississippi. He asked Dr. W. H. Anderson of Booneville to act as sponsor for the group until it was permanently organized. This is the third luncheon given by Dr. and Mrs. Anderson, editors of the journal, for the physicians who have been in the practice for fifty years.

You will note that the document in the May issue of the journal drawn up by Dr. W. H. Frizell and signed by a number of the men who have been in the practice for fifty years gave definite and permanent form to the organization. Any man who graduated fifty years ago as shown by the records of the State Board of Health and is a member of the Mississippi State Association is entitled to membership. According to the records in the office of the executive secretary of the State Board of Health, we have about seventy-five doctors who are now eligible to become members of the Fifty-Year Club.

The secretaries of the three distinguished medical societies were present: Dr. T. M. Dye, secretary of the Mississippi State Medical Association, Mr. C. P. Loranz, secretary-manager of the Southern Medical Association, and Dr. George P. Lull, secretary-manager of the American Medical Association. We were happy and counted ourselves most fortunate to have these distinguished men present.

The past-presidents of the Southern Medical Association were guests of the club; Drs. W. W. Crawford, Felix J. Underwood, and Harvey Garrison. Dr. Crawford is the oldest past-president in point of service of the Southern Medical Association and the Mississippi State Medical Association. Dr. Underwood whose honors at the hand of organized medicine have been too many to mention, is the best known public health officer in the nation. Dr. Harvey Garrison is the able and distinguished father of modern pediatrics in Mississippi.

Dr. J. K. Avent, president, and Dr. Paul Gamble, incoming president of the state association, Dr. D. S. Pankratz, dean of the Ole Miss Medical School and chairman of the Mississippi State Educational Board, Dr. W. D. Beacham, instructor in urology at Tulane, who accompanied Dr. Matas, completed the guest group.

Dr. Matas was the speaker of the occasion and cast his lot with the fifty-year men as a member. In his younger days he spent several months in Vicksburg in health work. He holds a deep affection for the doctors of Mississippi. Dr. Matas, dean of the surgical world, holds more ready information at the end of his tongue on medicine and perhaps other subjects than any other man living today. In his address he paid high tribute to the doctors of Mississippi and urged them to hold medicine uppermost in their minds even though they retire from active practice. The good will, the good cheer, the medical inspiration which came with the words and presence of Dr. Matas highlighted the meeting at Biloxi. The association was honored and happy to have him.

The editor and his wife were glad to pay tribute to the men of the Fifty-Year Club who have served so well, so unselfishly, and so courageously across the half century. Since service is the measure of greatness, then surely this small group of half-century men are among the greatest of the great.

N.B. It is with deep regret that one of the favorite members has passed on since this meeting, Dr. John Darrington of Yazoo City.

Complete victory over tuberculosis is in sight. This is supported by statistics and by the opinion of those who led the drive for eradication. The death rate continues to decrease. More adequate case finding programs have resulted in a rising percentage of minimal cases and a falling percentage of far-advanced cases. Ed., Hospitals, August, 1946.

Deaths

DR. JOHN DARRINGTON

A pall of gloom was thrown over Yazoo City May 19, when it was learned that one of its most distinguished and beloved professional citizens, Dr. John Darrington, had passed away.

Dr. Darrington's death occurred at his home at 3:30 o'clock Monday morning, following a heart attack. He had been taken ill at 8:30 Sunday night, and suffered the second attack early Monday morning.

His survivors include: his son, Dr. Gilruth Darrington; his daughter, Mrs. H. Chapman; his grandson and namesake, Lieut. John Darrington Chapman of the U. S. Navy Medical Corps; and his granddaughters, Prudence, Ann and Pauline Darrington.

Dr. John Darrington was born in Wilkinson County in 1870, the son of the late Dr. Robert Darrington and Lenora Molliman Darrington. Early in his 'teens he expressed a desire to follow the profession of his distinguished father, and he entered Mississippi A. & M. College for his pre-medical work. He was graduated there in 1890 with a B.S. degree. He received his Doctor of Medicine degree from Tulane University, and served his internship in Natchez Charity Hospital.

Yazoo County attracted the young physician and he came to Eden to begin his practice. In 1898, he moved to Yazoo City and established the first private sanatorium in this city. It grew with the years, and was finally incorporated into the Darrington-Swayze Hospital, and later the Yazoo Hospital.

In his early career he was married to one of the city's most attractive women, Miss Pauline Gilruth, daughter of the late Col. and Mrs. I. N. Gilruth. Theirs was a most happy marriage.

When death took from him his beloved wife, Dr. Darrington drank deep of a bitter cup, and he never ceased to miss the wife who had given him so many happy years.

Possessed of a brilliant mind, he rose to high rank in his chosen profession. He took postgraduate work at the New York Post Graduate School. Up to the last years of his life, he was a student of medicine, visiting the larger clinics each year and keeping abreast of the best of those engaged in his chosen life work. He was held in the highest regard by members of his profession, and was honored by being elected to the presidency of the Yazoo County Medical Society, the Central Medical Society, and the Mississippi State Medical Association, and the Tri-State Medical Association. He was a member of the Southern Surgical Congress, the Association of I.C. R.R. Surgeons, and was formerly a member of the American College of Surgeons. He was a member of the State Board of Health for three terms and since 1912 has served as district surgeon for the Illinois Central and Yazoo and Mississippi Valley Railroads.

Not only in professional circles did Dr. Darrington serve his fellowman, but for nearly fifty years he was a member of the Public Service Commission of this city, and the success of this phase of the city's business is largely due to his wise counsel. He also served as a director of the Bank of Yazoo City and director of the Yazoo County Chamber of Commerce, in addition to other positions of trust.

In his profession he always emphasized the importance of medical ethics and the need for honesty in surgery. He was fighting the pernicious fee-splitting evil practice long before the American College of Surgeons took action along this line.

He built his life around service to his fellowman and regarded friendship as a talisman of sterling worth. He gave of himself, and received much in return. He accumulated a goodly share of worldly goods and used what material wealth he was blessed with in doing charity "In His Name."

He was beloved of his family and of his friends, and was held in the highest esteem by the citizens at large. He was, perhaps our best-known citizen. In addition to his brilliant mind, he possessed a keen sense of humor. He could tell a good story, and was often in demand as an after-dinner speaker.

Dr. Darrington was an ardent sportsman who loved the outdoors, and was never happier than when following his dogs. Both hunting and fishing were his hobbies, and during the years he owned many fine dogs.

Blessed with a long and useful life, Dr. John Darrington passed into the Great Beyond having lived an upright life, consecrated to the service of his fellowman, coupled with a tender devotion to his family and loyalty to those whose hands he clasped and called friend.

—*Yazoo City Herald*

DR. W. F. JOHNSON

Dr. W. F. Johnson, a well-known physician of Sebastopol, died at his home Tuesday, May 6, after a long illness. Funeral services were held Wednesday at Sebastopol.

Dr. Johnson attended the Memphis Hospital Medical College and was licensed to practice in Mississippi in 1907.

RESOLUTION

WHEREAS, by the infinite wisdom of the Almighty our friend and fellow physician, Dr. Ross E. Anderson, has passed into eternity, and

WHEREAS, he was known and respected by his co-workers as a splendid physician, an energetic and conscientious worker, and

WHEREAS, his service rendered has been of great benefit and brought comfort to many: therefore

Be It Resolved, that in the death of Dr. Ross E. Anderson, the Society has lost a loved and valued member, and

Be *It Further Resolved* that these resolutions be spread on the minutes of the Society and a copy sent to the family of Dr. Anderson.

Signed by

DR. W. L. HUGHES, Chairman
DR. LUCIAN W. ALEXANDER
DR. F. D. HOLLOWELL

These resolutions were unanimously adopted at a regular Meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society, May 5, 1947.

COLORED PHYSICIAN DIES

Dr. R. F. Spears, colored physician of Meridian and Lauderdale County, died May 13.

He received his M.D. degree from Louisville National Medical College, in 1911, and was licensed in Mississippi in 1922, by written examination.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

THE USE OF SULFADIAZINE—SULFATHIAZOLE MIXTURE IN THE TREATMENT OF CHILDREN—David Lehr, Lawrence Slobody and William Greenberg, New York Medical College, Flower and Fifth Avenue Hospitals, New York, N. Y., Journal of Pediatrics, 29: 275-85, September, 1946.

"The solubilities of sulfathiazole, sulfadiazine, and sulfamerazine together in a given quantity of water are independent of each other. Each. will dissolve to the same extent as it would if no other sulfonamide were present Combinations allow less of each type of sulfonamide to be used, and so cut down the risk of renal complications associated with the particular sulfonamide.

The absorption of sulfadiazine and sulfathiazole mixtures on three seven-to eight-year-old boys showed the mixture to be more readily absorbed than these drugs alone. The urine concentration of each drug was less and the conjugation in the urine about the same amount as if sulfadiazine and sulfathiazole were used separately. The *in vitro* antibacterial activity of the sulfonamide mixtures corresponded to the total concentration of free sulfonamides and was occasionally higher with the mixture than when each drug was present by itself.

In all, two hundred ill infants and children were treated, using 0.1 gm. per pound per day of sulfadiazine and sulfathiazole mixture at four-hour intervals until defervescence; following this, every six hours. No alkalis were used. Crystalluria was infrequent and therapeutically effective blood levels were readily maintained. Therapeutic responses were satisfactory. Allergic manifestations occurred in two patients. Nausea and vomiting were rare. Kidney complications did not occur."

COMMENT: It is our opinion ,as well as our experience, that the combination of the sulfanomides as indicated in this article is of tremendous value in the treatment of conditions where either or both of the drugs is indicated. Our attention was called to the advantages to be obtained in the administration of combined sulfadiazine and sulfathiazole mixtures quite some time ago, and it has been our practice to use this combination almost entirely when prescribing any of the sulfa drugs. We have not had any kidney complications and very little other evidence of toxic manifestations since we began this type of medication.

The Cerebral Palsy Child: Diagnosis and Treatment—Margaret H. Jones, State Board of Health, Wyoming, and Children's Hospital, Los Angeles, California., American Journal of Nursing, 46:465-68, July, 1946.

"Cerebral palsy includes individuals with spasticity, athetosis, and ataxia, and is second to poliomyelitis is causing crippling of children. It affects about ninety-six per 100,000 children under sixteen. There are about 150,000 cases in this country. About 70 per cent are capable of being taught, being of dull, normal, or greater intelligence.

Accurate diagnosis is necessary for correct treatment. Usually a patient has but one type of neuromuscular handicap even though the different kinds of movements may appear superficially similar. In addition to involvement of extremities, there are frequent defects of speech, hearing, vision, and sensation. Speech defects may be caused by involuntary movements of the diaphragm or spastic muscles of articulation. Hearing defects may be selective for certain ranges of pitch. Visual defects include abnormal vision and lack of control of extraocular movements. Electro-encephalograms and pneumo-encephalograms can aid in making the diagnosis.

The pathologic lesions in athetosis involve mainly the basal ganglia and extra-pyramidal tracts, and possibly the precentral gyrus, with congenital absence or anomaly. In spasticity the lesions are usually in the pyramidal tracts, and often cortical as well. In this type mental deficiency is most common. Cerebellar lesions result in ataxia.

These children can be helped to be more self-sufficient although not all can become normal individuals. For complete evaluation the following facilities are essential: medical history and complete physical examination by a pediatrician familiar with cerebral palsy, examination of hearing and vision, orthopedic examination, muscle analysis if spastic, psychometric examination, for intelligence and aptitudes, social and environmental study, and neurologic, neurosurgical or psychiatric consultation if necessary. Diagnosis should be made as early as possible to enable the child to learn to sit, walk and talk at as nearly normal times as possible.

A treatment center needs facilities for physiotherapy, occupational therapy, surgery braces or casts, education, and vocational training. The methods of therapy differ fundamentally for the three types of palsy. Treatment for the athetoid aims to allow the patient to carry out normal voluntary motions without interruption by involuntary motion This is done by teaching him to relax before attempting a motion. Surgery is of little benefit except to correct contractures. Curare and prostigmine may prove of benefit in the future Braces may be helpful, but physiotherapy is the most useful form of therapy.

Treatment for the spastic aims to reduce the spasticity in involved muscles. Constant gentle repetition of motion through an increasing range and with increasing speed leads to greater ability to perform the motion without the stretch reflex. Where physiotherapy alone does not succeed, braces or casts may establish better balance of muscle power, or surgical treatment (neurotomy, tendon lengthening or transplant, or arthrodesis) may reduce deformity. As cases are being treated earlier and contractures prevented, less surgery becomes needed. Prostigmine has been reported of value in some cases.

Treatment for the ataxis consists in training voluntary motor centers to take over the function of the damaged balance mechanisms. With all these patients determination of handedness is important, especially in relation to the speech center.

Simple equipment can be devised to help the child assume increasing independence. A simple reclining chair with a table to fit allows the child who cannot sit alone to see more of the world. A walker and low practice stairs facilitate the learning of locomotion. Spoons and forks with large handles, plates with right-angle edges, and drinking straws help self-feeding. When fundamental motions can be performed and grouped, occupational therapy should be begun to teach various skills.

A planned program for parents is important to teach them the nature of the condition and the methods of physical and occupational therapy. Children taken away from their homes for considerable periods often do not maintain their improvement on return home. It has proved better to provide daily or weekly visits to a treatment center, or, if the distance is great, to spend a few days at the treatment center every few months, with home follow-up by a physiotherapist or public health nurse. Many children can attend regular school; otherwise, home instruction or special schools become desirable.

The progress and success of treatment depend upon the efforts of the patient, rather than on physician, teacher, physiotherapist, or occupational therapist. Helping him understand his handicaps, and making the best diagnostic and treatment facilities, offer the best means of attaining good results."

COMMENT

Just at this time, this article would seem a propos since we are having much to say about cerebral palsy. A program for the proper treatment of these cases is now in process of planning. There is no doubt but what much can be done for many of these cases; yet we know that there are also many of them who cannot be benefited on any kind of treatment.

Pleural effusion occurring in young persons in whom no other readily demonstrable cause exists can be considered tuberculosis until clearly proved otherwise. D. J. Feldman, M.D. and H.P. Lewis, M.D., Med. Clin. N. America, 1946.

State Board of Health

Felix J. Underwood, M. D.

VENEREAL DISEASE CONTROL IN MISSISSIPPI, 1945-1947

by A. L. Gray, M.D.
Director Division of Preventable Disease Control

The past biennial period has been a historic one in the control of venereal disease. Gains have been made which are a real credit to the public health program and there is reason for optimism that these diseases may ultimately become as rare as typhoid fever and other communicable diseases which have been conquered by vigorous public health attack.

The venereal disease control program has been a most intensive one, reaching into every nook and corner of the state. In finding cases of syphilis and bringing them under effective treatment, Mississippi has consistently led the nation, and there has been national recognition for its effectiveness and methods. Such record of achievement was possible only through unity of purpose and action on the part of county health departments, physicians, the rapid treatment centers, the State Board of Health, and the United States Public Health Service. Almost every segment of the population has been reached, from the unborn baby to the man of tottering age and from the beggar in the slum to the so-called socially élite.

The newer developments in treatment together with improved education and case-finding technics necessitated some alterations in the program as it was originally set up. but all changes made have been improvements in the direction of reduced incidence of syphilis and gonorrhea in Mississippi.

Two of the basic facts which indicate why program changes have been made and which give real hope for much more rapid control than could be dreamed of in 1938 when intensive venereal disease control activities got under way, are:

1. With the use of penicillin it is now possible to cure most cases of syphilis in nine days of treatment compared to twelve to eighteen months of weekly treatment under the old schedules. The new treatment is now given entirely in rapid treatment hospitals whereas the old was given in 300 clinics in the state.

2. Until very recently, gonorrhea treatment was difficult and not too effective. With the introduction of the sulfonamide drugs, approximately one week's treatment was required for all cases and for many cases a much longer period. But now that penicillin is available, effective treatment can be given in a matter of a few minutes.

Full advantage has been taken of these outstanding treatment discoveries in Mississippi's program of control. All cases of syphilis discovered are now being given complete treatment in rapid treatment centers; and gonorrhea cases are being treated in local health departments with one injection of penicillin in wax.

The county health departments have become primarily case-finding and diagnostic centers for syphilis, with treatment being delegated to rapid treatment centers. This is in contrast to having to treat thousands of cases of syphilis each week in local clinics, which was the case in the previous biennium, leaving little time for other essential public health activities. In gonorrhea control, the county health department has full responsibility for both finding and treating cases.

Rapid Treatment Centers

With the advent of new methods of treatment, using penicillin as the basic drug, the three rapid treatment centers at Meridian, Greenwood and Brookhaven each have become control centers for their own particular areas of the state. Aside from serving as diagnostic and treatment units, the centers have done an outstanding job in venereal disease education.

Patients are carried to and from the centers by buses which reach every county in the state on regular schedules. There are from one to five calls a week to each county for pick-up or delivery of patients.

Something of the achievement and growth of these centers is reflected in the following summary of admissions:

Year	Total Patients Admitted	Cases of Syphilis Admitted	Cases of Gonorrhea and other V.D. Admitted
1943	709	not avail.	**not avail.**
1944	4,153	2,088	2,065
1945	17,236	9,816	7,420
1946	20,916	14,685	6,231
1947*	6,009*	4,594	1,415
Total	49,023	31,183	17,131

(*first quarter admissions, indicating roughly 24,000 admissions in 1947).

From this table, the following facts are apparent: 1. Roughly, 2½ per cent of the total population of the state has been admitted to the rapid treatment centers; 2. The annual admission rate of syphilis patients to the centers is still increasing and at the same time all treatment of syphilis in health department clinics has been discontinued; 3. The treatment of gonorrhea in rapid treatment centers is steadily being replaced by treatment of this disease in local health departments.

An outstanding feature of the rapid treatment center contribution to venereal disease control has been the case-finding and education. Every case admitted to the centers is thoroughly interviewed to determine the source of infection and those to whom the infection may have been transmitted. This information is followed up by the county health departments for the purpose of finding other cases. In addition, all admissions are thoroughly indoctrinated as to the causes, symptoms, methods of spread and prevention of these diseases and their damages to the body and to health.

Gonorrhea

Gonorrhea has been attacked vigorously during the biennium. Its prevalence is much greater than syphilis but it is not as destructive to the human body as is syphilis. Due to intensification of case-finding efforts and probably an actual increase in the disease as a result of postwar influences, the number of cases of gonorrhea treated by the county health departments and in rapid treatment centers increased three- to four-fold in this biennium, compared to the previous biennium. This is reflected in the following summary:

Cases of Gonorrhea Treated by Health Departments and Rapid Treatment Centers

Year	No. Cases Treated
1943	6,328
1944	6,236
1945	18,439
1946	21,942

Neurosyphilis

Syphilis of the brain and spinal cord is the most serious complication of the disease and occurs frequently in untreated or partially treated cases. The end result of most such cases, if not given specialized treatment, is death after many years of mental and physical incapacity. Prior to death, patients so afflicted usually require years of intermittent mental hospital care. Treating them in the early stages of the disease with fever therapy and/or penicillin stops the progress of the disease, prevents the necessity for long periods of hospitalization at public expense and allows them to be productive citizens for the usual life span. The economy of giving these patients specialized treatment before they become mental hospital inmates as the disease progresses to the incurable stage is apparent. To this end, the State Legislature foresaw the wisdom of providing funds through the Mississippi State Hospital to be used in treating early neurosyphilis cases and thus prevent them from becoming permanent public charges.

The Mississippi State Hospital has used the funds provided for this purpose in coöperation with the State Board of Health and the United States Public Health Service, treating neurosyphilis cases before they become incapacitated. The specialized treatment required was done in the rapid treatment centers. The patients requiring penicillin only were treated in any one of the centers to which they were referred but the special neurosyphilis unit was maintained at the Brookhaven Medical Center. At this center fever cabinets were provided for inducing fever in those patients failing to respond to penicillin. A summary of the neurosyphilis cases treated is given below:

	1945	1946
Total number neurosyphilis cases treated	269	1146
Number of cases treated with fever	47	79

The fact that penicillin is quite effective in treating many cases of neurosyphilis was discovered after the fever unit was set up, but many cases require both penicillin and fever. Without question a large percentage of these cases of early neurosyphilis which were given specialized forms of treatment would have progressed to the stage requiring lengthy hospitalization had the neurosyphilis program not been developed.

Special Projects

In searching for new technics in finding cases of syphilis and gonorrhea a special case-finding project was carried on in Leflore County during March, April and May, 1947. The Leflore County Health Department, the Leflore County Board of Supervisors, the State Board of Health and the United States Public Health Service all coöperated on the project. It was a drag-net approach to case-finding in which an attempt was made to blood test everyone from twelve years of age up and to do physical examination of the genitals of all males and of all females with symptoms or whose sex partners were found to have syphilis or gonorrhea. The survey covered the entire county and resulted in the blood testing of 13,197 individuals. A summary of the findings is given below:

Total number of blood tests	13,197
No. of blood tests positive or doubtful for syphilis	2,802
or	21%
No. of cases of gonorrhea and other ven. diseases	831

A large percentage of the syphilis cases were already known to the health department and had had partial or complete treatment. All cases of gonorrhea were given penicillin in the mobile bus unit in which the examinations were done on the plantations.

Of very great significance was the fact that on several of the same plantations on which a similar blood survey was made in 1938-1939, from 35 to 40 per cent were found to have syphilis. In the present survey these same plantation groups showed no more than 21 per cent with syphilis and of these more than half were under treatment at the time of the survey.

Another special project was the preparation and distribution of a booklet to private physicians on the diagnosis and rapid treatment of syphilis. This was done because of numerous requests for information about the subject and further because rapid treatment had become adaptable to office practice. The booklet has attracted nation-wide favorable comment and seems to fill a real need in the total control program. It is hoped that the physicians of the state will find it helpful.

In the biennium, July 1945—June 1947, venereal disease control has made more real progress than in any previous period, because of new methods of treatment, case-finding, and education. Evidence of this is the fact that roughly 65 per cent of all suspects coming to the health departments for service come voluntarily without pressure from the health departments, while even four years ago practically all who came for service came as a result of a specific request from a health department worker. With the tools at hand, continuation of the present program for ten years more will practically eradicate syphilis and will make gonorrhea a much less formidable public health problem. Relenting of efforts now would result in increased spread of these diseases so that the gains of the past few years would be rapidly lost.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	April 1947	April 1946	April 5-year av.
Acute Poliomyelitis	2	1	1.6
Bacillary Dysentery	10	607	410.4
Dengue	0	0	.8
Diphtheria	16	17	20.0
Influenza	818	2979	2892.2
Measles	89	4821	2577.8
Meningococcus Meningitis	4	8	26.8
Other Forms Meningitis	8	6	6.2
Pellagra	2	164	177.2
Pneumonia	112	1382	1145.2
Pulmonary Tuberculosis	100	181	129.8
Scarlet Fever	23	22	39.6
Smallpox	1	0	.8
Tularemia	0	4	8.0
Typhoid Fever	1	10	6.6
Typhus Fever	5	9	6.8
Undulant Fever	4	8	5.0
Whooping Cough	53	693	920.0

It has been estimated that nearly four per cent of all persons who visit physicians' offices are coughing or expectorating. The alert physician will insist upon a sputum examination of all such patients. Such practices will be rewarded by the discovery of tubercle bacilli in three or four of every 100 specimens examined. The country doctor will often be astonished to discover that a patient with slowly resolving pneumonia has an acid-fast reason for prolonged convalescence. Ed., Pub. Health Rep., Dec. 6, 1946.

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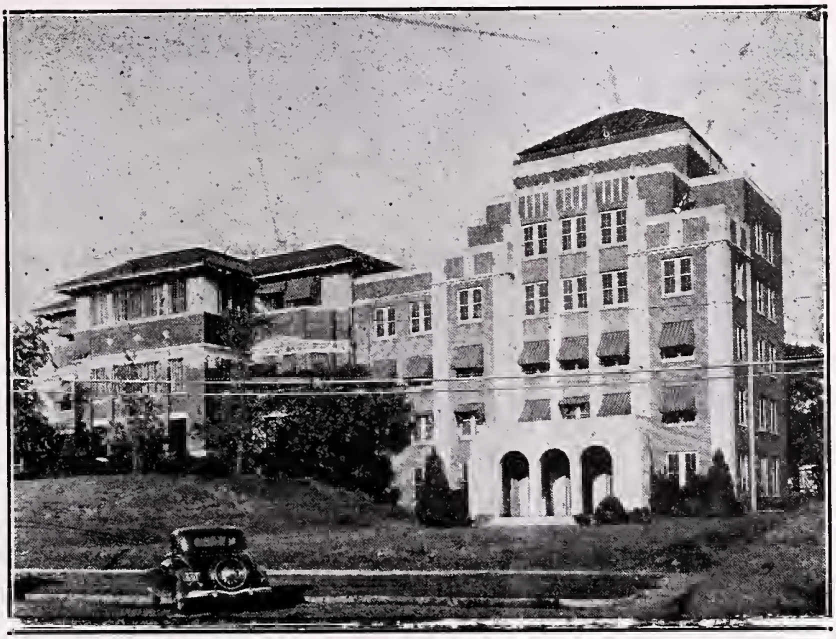

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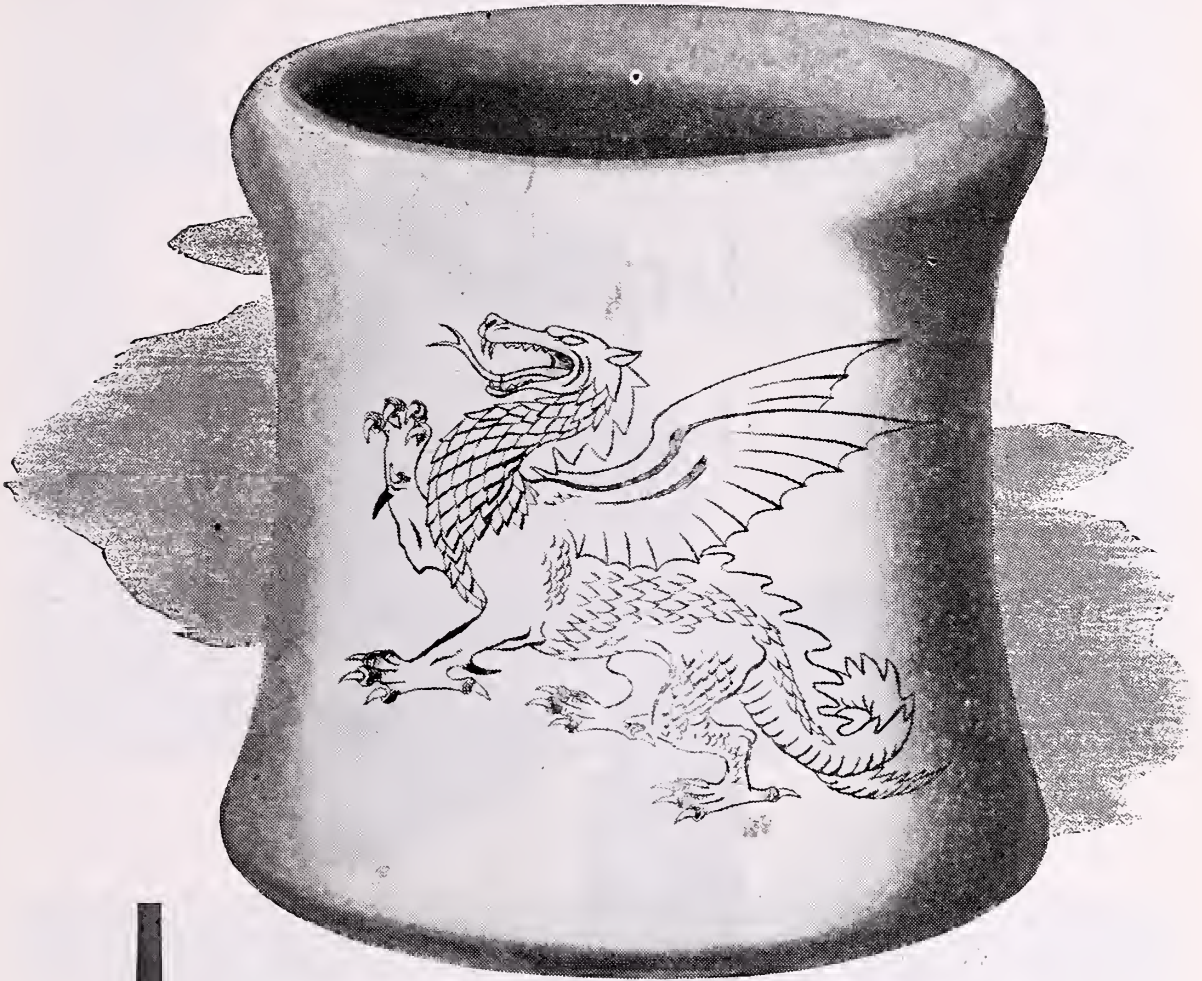

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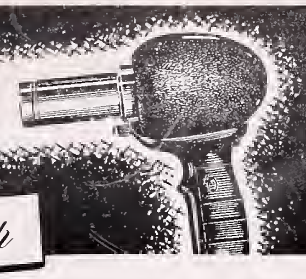

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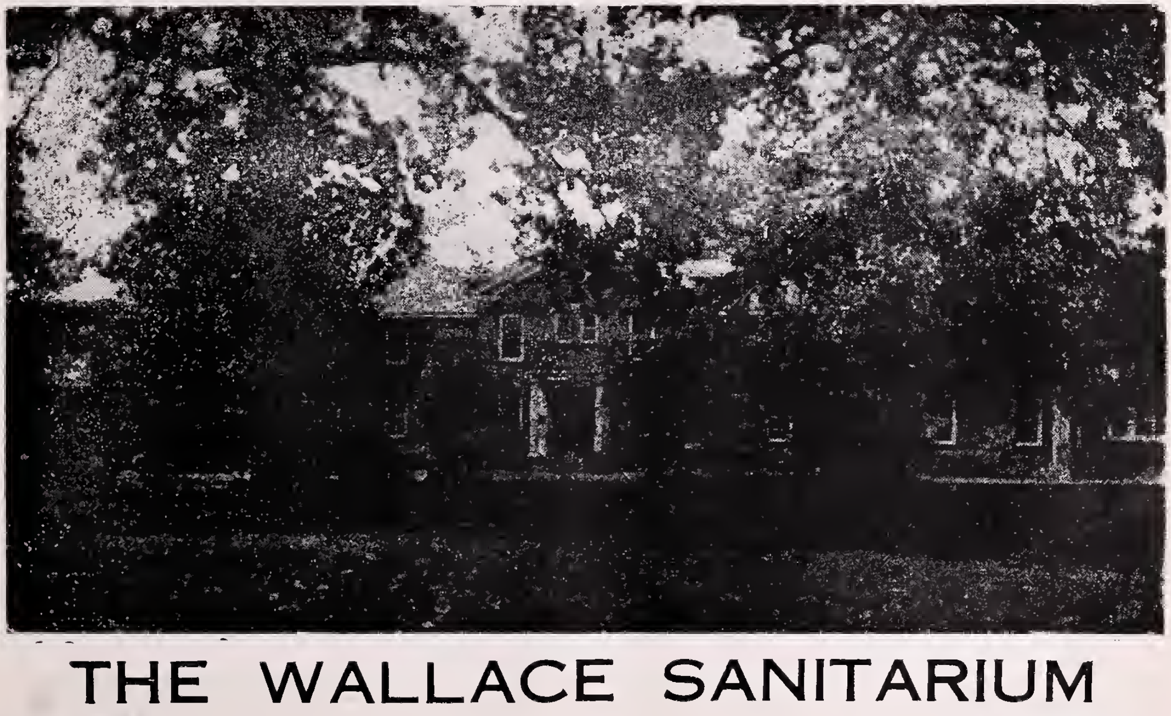

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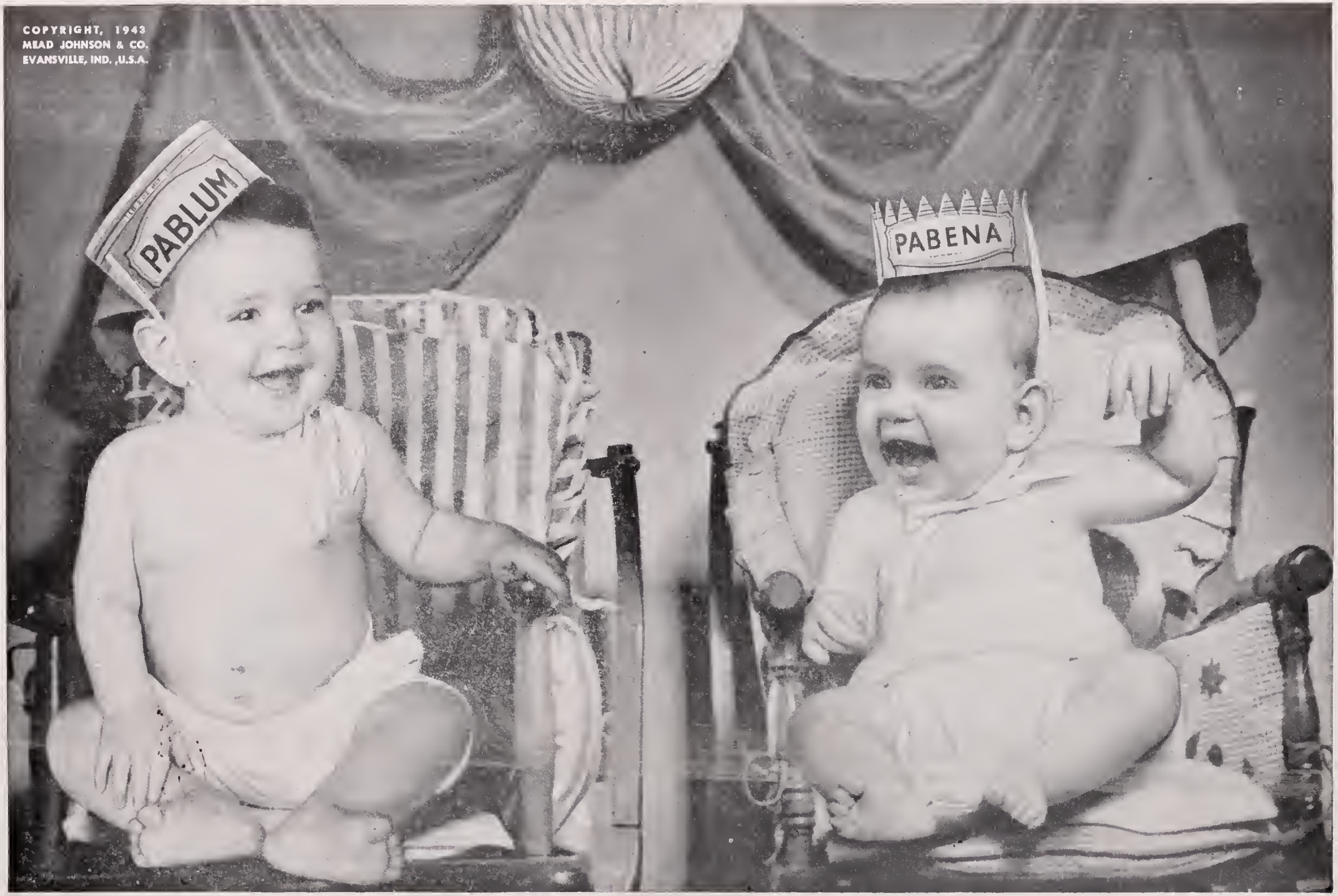
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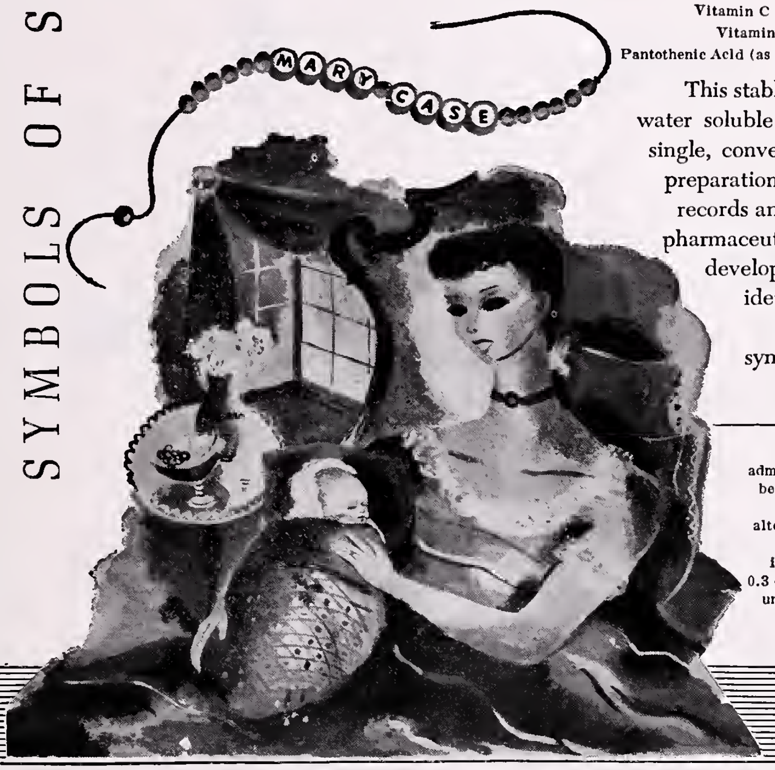

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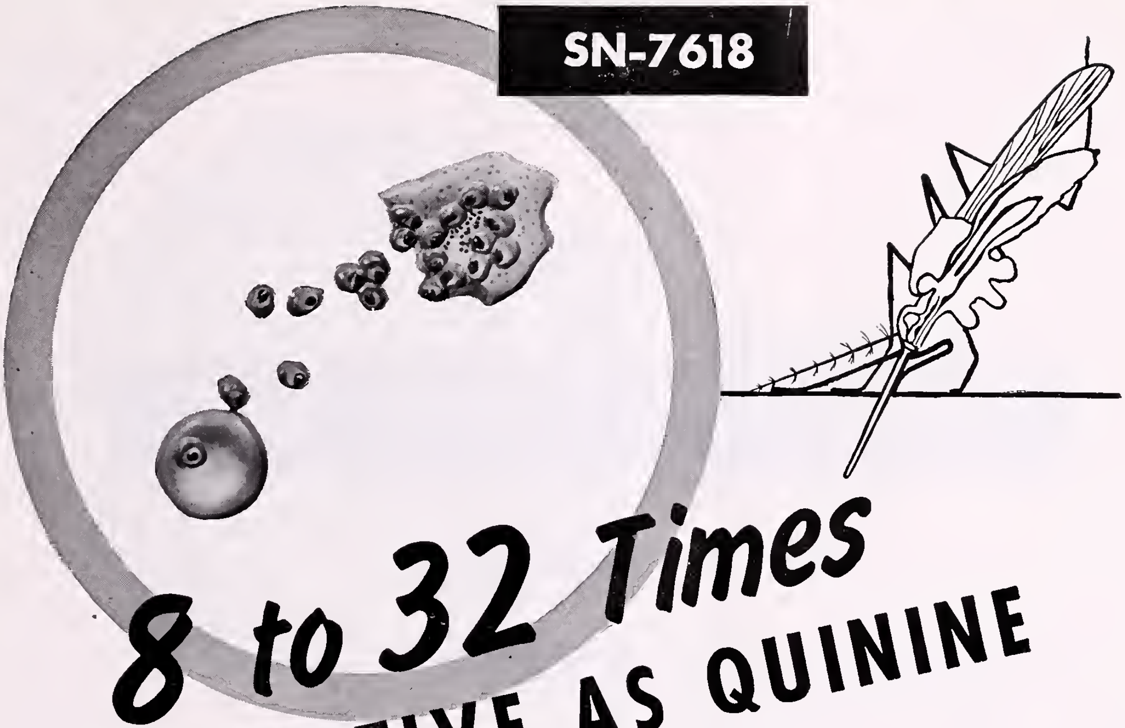

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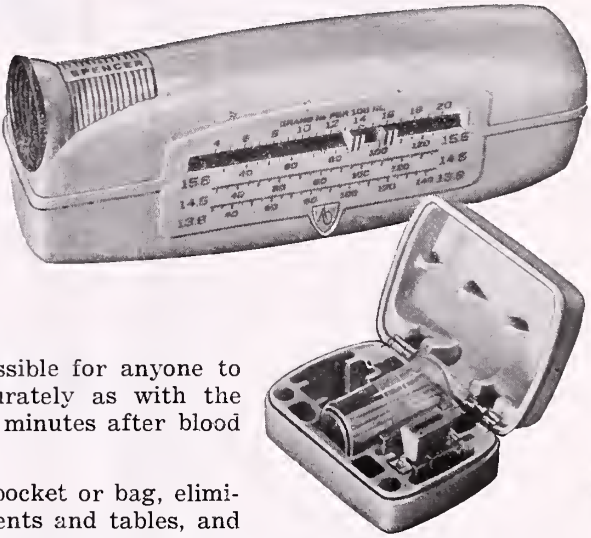

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[1] Editorial: J.A.M.A. *134*:292 (May 17) 1947.

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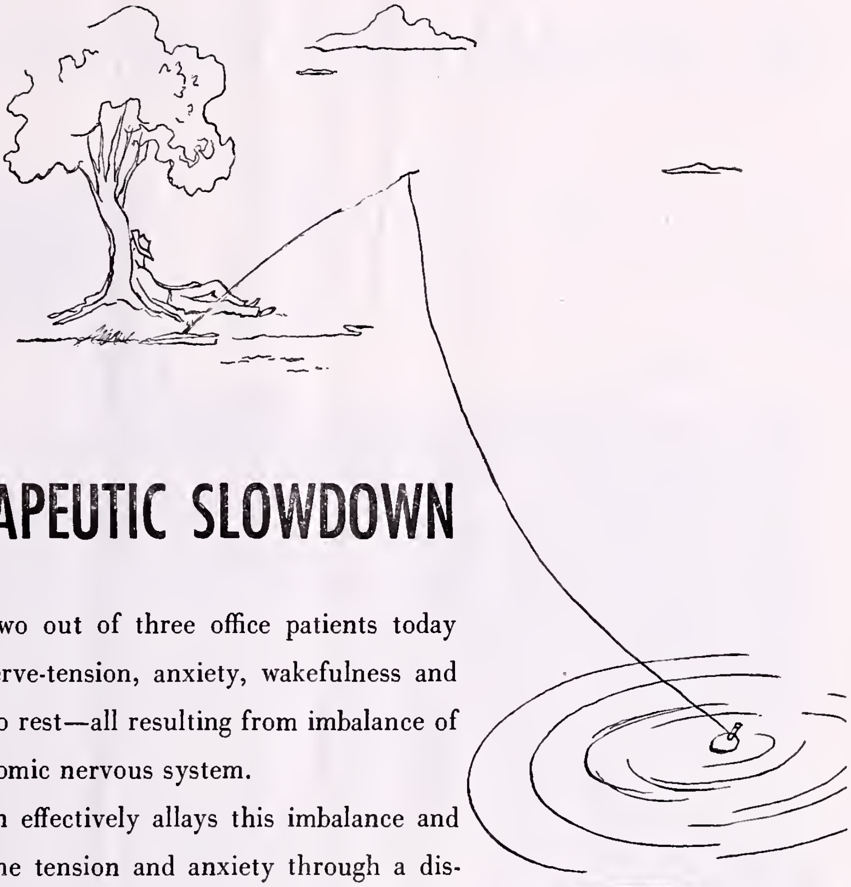

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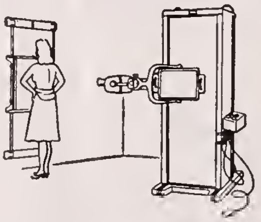

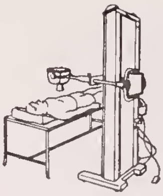

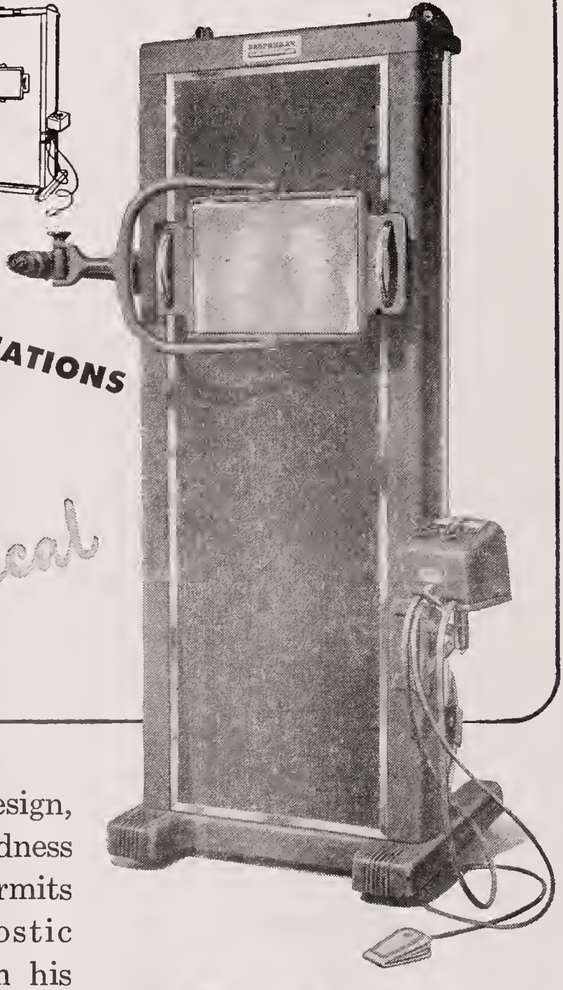

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Causes and Treatment of Exophthalmos*

WILLIAM L. BENEDICT, M.D.
Section on Ophthalmology, Mayo Clinic,
Rochester, Minnesota

WHEN EXOPHTHALMOS occurs as a result of systemic disorder, it is likely to be of considerable significance from the viewpoint of diagnosis and prognosis. As it is the most common sign of local disease within the orbit, attention naturally is first fixed on the possibility that the exophthalmos in the most common types of cases is caused by the enlargement of a space-taking lesion behind the eyeball, with probable extension into extra-orbital structures, or that it possibly is related to a systemic disease.

In cases in which the onset of exophthalmos is rapid the condition usually arouses the patient to seek medical advice early in the course of its devopment, but in cases of slowly advancing proptosis, with compensation for visual complications such as diplopia, delayed consultation permits progression to the extent that irreversible changes occur, resulting in loss of the opportunity to employ the type of treatment that is most likely to give the best therapeutic result.

Exophthalmos, or proptosis, may be accompanied by edema or swelling of the eyelids and sometimes by chemosis. Passive congestion or active inflammation may be responsible for appearances that are similar at certain stages in the course of several pathologic conditions. The degree of exophthalmos is not an index of the severity nor of the chronicity of the condition which causes it. In fact, the clinical picture of exophthalmos may be pathognomonic of its cause in some cases—and entirely misleading in other cases of the same type of disease. The etiology of exophthalmos in an individual case may be difficult to explain.

Exophthalmos from causes within the orbit is associated with benign and malignant processes, some of which involve the orbit by direct extension from one of the surrounding structures, such as the ethmoid and sphenoid cells or the cranial cavity, while other processes arise within the confines of the orbit itself from pathologic changes in the tissues or from congenital or misplaced rests.

Exophthalmos is only a sign of disease; it is never meaningless nor insignificant. It is an early sign in the course of so many local and systemic diseases that a classification of them into categories is required for a clear conception of that part of the syndrome attributable to exophthalmos.

Exophthalmos caused by certain types of extra-orbital lesions

Extra-orbital tumors and cysts which invade the orbit by direct extension produce exophthalmos as the first clinical sign of their development. From the bony walls of the paranasal sinuses, benign tumors called "osteomas" may extend into the orbit. They are usually rounded masses of cancellous bone with hard smooth shells; they consist of masses of mucus-filled cells and bony granules divided by thin septa. The tumors are pedunculated and covered by mucous membrane continuous with the lining of the sinus from which they spring. As they expand they cause erosion of the bones of the orbit and the adjacent sinus walls. The tumors covered with mucous membrane are in a potentially infected field continuous with the sinuses and are walled off from the brain and orbital tissues by an adequate protective barrier.

Exostoses arise from the bones of the cranial vault. Those which arise from the inner surface of the frontal bone extend into the brain as pointed darts and set up local points of inflammation and thickening of the meninges but seldom penetrate the orbital roof.

Another type of bony tumor, hyperostosis, is the result of invasion of bone by a soft-tissue tumor, such as meningioma or pulsating angioma. A rare form of primary bone disease that involves all the bones of the head is leonthiasis ossea. In acromegaly also the involvement of bones of the face is widespread and exophthalmos is not produced.

Congenital atresia of the connections of the sinus with the nares or their closure in early life because of trauma or inflammation results in the formation of mucoceles that alter the walls of the orbit and thereby produce exophthalmos and usually lateral displacement of the eyeball. Mucoceles develop slowly in young persons and displace normal bony walls of the face and head, resulting in displacement of the eyeball and some exophthalmos with little or no visual disturbance. During the development of mucoceles some walls are merely thinned by erosion so that the structural changes found on exploration are not evident on roentgenologic or rhinoscopic examination. Aside from the slight deformity produced, a mucocele rarely does any harm; however, the difficulty of establishing a definite diagnosis of mucocele makes it necessary to operate in a case in which mucocele is suspected to rule out the probability of one and thus to narrow the field of presumptive causes of the exophthalmos.

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*Read before the fifty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 11-14, 1947.

Exophthalmos of considerable extent may be caused by a mucocele that involves the antrum and most of the ethmoidal cells but which does not give positive findings on roentgenologic and rhinoscopic examination and which does not cause local symptoms until vision is disturbed. Diplopia and loss of vision from optic neuritis are the usual visual complaints; they may be entirely relieved if the mucocele is drained.

Erosion of bone may result from any unusual pressure made by soft-tissue growths or by cysts on any wall of the orbit; the lateral wall, however, is least subject to displacement by the pressure. Consequently, the expansion of the orbit usually is upward into the cranial cavity, nasalward into the sinuses or downward into the antrum. A cyst or mucocele may reach considerable size, by reason of decompression of one of the walls of the orbit, before producing enough deformity of the face to be noticeable. Hence, most mucoceles are found at operation to be larger than was indicated by clinical findings.

The "feel" of a mucocele on palpation of the regions of fullness about the orbit is much the same as that of other types of cyst or tumor. The one difference that can be noted is that of deformity of the orbital rim of the frontal sinus; in this condition the superior nasal quadrant of the rim is usually expanded and flattened, and this results in spreading of the superior orbital notch and in obliteration of the nasal rim.

Exophthalmos caused by intra-orbital lesions

Closely resembling the changes in the orbit caused by mucoceles are those caused by venous aneurysms and expansive lesions of the blood vascular system, such as hemangiomas and varices with arterial communications. Congenital varices or aneurysms are not common but congenital anomalous vessels are often noted from the weakening of veins due to stretching of the vessel wall and to the continuous formation and breakdown of multiple thrombi. Extravasation of blood into the orbit following dissolution of the thrombi causes discoloration of the skin of the eyelids, an aid in diagnosis. Arterial blood sometimes flows into venous aneurysms as a result of erosion of the vessel wall. When this occurs, expansion of the aneurysm is accelerated. The frontal and angular veins become greatly dilated and tortuous, and pulsate. The course of the frontal vein may be marked by deep erosion of the bone well back under the scalp. The degree of proptosis depends on the size of the aneurysm within the orbit. The proptosis sometimes is so severe as to require surgical intervention to prevent loss of the eyeball.

Pulsating exophthalmos is due only to the flow of arterial blood into venous spaces. Pulsation of the eyeball is synchronous with the heart beat and is intensified by lowering the head below the level of the heart. Exophthalmos develops slowly as the orbital veins give way and the blood spaces expand. The bony wall of the orbit, when pressed on by a pulsating tumor, may undergo erosion. Thus decompression of an orbital wall may lessen the forward pressure on the eyeball and the consequent protopsis. The finding of bruit and thrill over the eye is confirmatory evidence. Although bruit may be heard by the patient in both ears so that he cannot tell whether the left or right side is involved, the thrill is limited to the affected side. Another helpful fact in diagnosis is that the aneurysm is unilateral. While it is possible for similar conditions to appear in both orbits at the same time, such simultaneous occurrence of lesions must be considered coincidental.

The most common cause of pulsating exophthalmos is fracture of the base of the skull and rupture of the cavernous sinus. A severe blow on the temple which luxates the petrous tip of the temporal bone is the most frequent recorded trauma. Evidence of occurrence of pulsating aneurysm may not appear for some days or weeks after the injury; this delay is a matter of medicolegal importance. The symptoms are bruit, exophthalmos, congestion of the eyelids and conjunctiva, paralysis of one or more of the extra-ocular muscles, diminution of visual acuity, vertigo and headache. The progress of the symptoms usually is slow so that surgical intervention may be deferred for several years but in some cases symptoms develop so rapidly that radical operation becomes urgently needed.

In all cases of pulsating exophthalmos careful study is required. Before any treatment is applied, the "carotid compression test" should be made. If complete occlusion of the common carotid artery by digital compression on the affected side is followed by syncope, it is an indication that collateral circulation in the brain is inadequate to sustain life. By partial occlusion of the common carotid artery for thirty minutes a day for a few weeks, adequate collateral circulation may be established so that complete occlusions may be accomplished. Spontaneous cure is rare. In the more severe cases ligation of the common carotid artery and its main branches will not stop the pulsation within the orbit because of the blood flow from collateral vessels. A transcranial operation which exposes the region of the cavernous sinus is required to close off all the arterial blood. The roof of the orbit may then be removed and the larger dilated veins within the orbit removed by dissection after ligation.

Vascular tumors of the orbit are related to aneurysms only in respect to the cavernous spaces found in certain types of angiomas which increase resistance to blood flow. Only a few of the large and most cavernous types of hemangiomas are found to be pulsatile; they differ from the common pulsating aneurysm in that the force of the pulsation is not accentuated by lowering the head. Pulsating tumors cause erosion of bone if the tumor is expanding, but in instances of growth by actual increase in the amount of tissue in the tumor, the action on the bone is one of irritation so that hyperostosis occurs at the site of contact. Thickening of bone along the roof of the orbit and along the sphenoidal ridge may simulate, on roentgenologic examination, the hyperostosis of basal meningioma.

Hemangioma is the most common primary tumor of the orbit and varies in size and density. Some are encapsulated and firm, with relatively scanty blood supply. They are known as "fibrohemangiomas" or "hemangiofibromas," according to whether the fibrous mass or the blood spaces are dominant in the structure. Lymphangioma is seldom seen as an isolated orbital neoplasm and has no distinguishing characteristics unless the lymph nodes, especially the preauricular and upper temporal, are involved. Vascular tumors of any type within the orbit, whether primary or not, may cause exophthalmos. As such tumors expand, the exophthalmos usually progresses in proportion to the rate of growth of the lesion. However, congenital aneurysms are known to remain stationary for years.

Surgical treatment for vascular conditions that cause exophthalmos is potentially hazardous. The fragile wall of a venous aneurysm provides little protection against rupture and extensive hemorrhage that may be difficult to control. Ligation of a carotid artery may be necessary to stop dangerous hemorrhage from an orbital aneurysm or a tumor opened surgically at orbit performed by the anterior or the lateral approach. In progressive exophthalmos caused vascular conditions the surgical measures adopted must be adequate to cope with any emergency; one must be ready to ligate vessels intracranially if necessary.

Within the orbit may be found any type of tumor that can reach it by direct extension or by metastasis. Consequently, in any case of exophthalmos a thorough search for an extraorbital tumor is required. Presence of a tumor within the orbit cannot always be excluded from the diagnosis, even though the evidence may be rather clear that the exophthalmos is explainable on other grounds; it should be remembered that intra-orbital tumors or cysts may be accompanied by signs of systemic disease.

Mikulicz's disease illustrates this point. In this rather rare condition exophthalmos is an early complication and is accompanied by swelling of the eyeballs and mild chemosis. The onset is insidious and the course is not remarkable until the disease is well advanced. The resemblance to exophthalmos of hyperthyroidism is striking. The chief differences lie in the lack of other evidences of goiter and in the histologic changes seen in the palpebral tissue at biopsy. Response to roentgen therapy is striking in Mikulicz's disease and negligible in goiter.

Exophthalmos of hyperthyroidism

The exophthalmos of hyperthyroidism takes on a greater variety of forms than is generally realized. Certain features of this condition are so characteristic that a mere glance at the facial expression is sufficient to suggest the diagnosis. On the other hand, the association of dysthyroidism with exophthalmos is often missed. Early changes in facial expression are indicative of hyperthyroidism to one who is familiar with the varied expressions characteristic of the disease. Although eyelid signs that are described in texts are not always present or only doubtfully so, when they do occur they are quite dependable aids in diagnosis. Direct protopsis with little or no lateral displacement is more often found in disease of the thyroid than in neoplastic disease and the changes in the extra-ocular muscles which cause varying degrees of diplopia are found only in hyperthyroidism.

It is estimated that exophthalmos occurs in about one of four persons who have hyperthyroidism. The degree of exophthalmos is somewhat indicative of the severity of the disease, although exophthalmos may be severe in quiescent cases of goiter and absent in severe cases. Ocular signs of goiter are usually bilateral and so, are quickly recognized. Unilateral occurrence of exophthalmos is often attributed mistakenly to orbital tumors. The time of appearance of exophthalmos in the course of the disease also is variable. In many cases in young persons, exophthalmos is the first and most prominent sign of the disease, while in older persons it may come on as a late sign, even after the usual systemic signs of goiter have subsided or disappeared.

A history of a transient episode of hyperthyroidism with complete recovery from systemic signs and symptoms can frequently be elicited by careful questioning in cases of exophthalmos that seem to have no other explanation.

Exophthalmos is due to an increased amount of fluid within the orbit and to the resultant infiltration of tissue by abnormal cellular and fatty elements rather than to any increase in bulk of normal fat or to actual hypertrophy of the extra-ocular muscles. The fluid content cannot be reduced by dehydration nor by administration of the usual pharmaceutical agents that are effective in reducing edema elsewhere in the body. As the general symptoms of hyperthyroidism are improved by administration of thyroid extract and iodine or other remedies, the character of exophthalmos is usually improved at a similar rate, but not always so. While the metabolic rate may be influenced at will in some cases, the amount of exophthalmos may remain unchanged or may become altered only slowly over months or years.

The medical treatment of exophthalmos of hyperthyroidism is, on the whole, disappointing. Severe acute exophthalmos with chemosis, sometimes referred to in this country as "malignant exophthalmos," will respond to roentgen therapy applied directly to the orbit, but in cases of several weeks' standing the condition is seldom influenced by such therapy applied either to the orbit or to the pituitary region.

Surgical decompression of the orbit is helpful in some cases of exophthalmos if the general symptoms of goiter have subsided. However, it has been demonstrated that decompression does not halt the progress of exophthalmos even in the presence of a low metabolic rate, as occurs after thyroidectomy, and decompression is not to be regarded as a means to bring about relief of a critical condition. The cornea may be protected by blepharorrhaphy in mild cases, but such treatment is not to be recommended as a routine measure.

Treatment

Treatment of exophthalmos may be considered under three headings: medical, radiation and surgical.

Medical—Treatment of exophthalmos without resorting to surgery is applicable where the cause of the exophthalmos cannot definitely be determined, in cases of orbital cellulitis, and in systemic diseases in which inflammatory exophthalmos occurs as a complication. Proptosis with disturbance of motility and varying degrees of inflammation within the orbit is found in many cases of tularemia. Inasmuch as the diagnosis cannot be made from the ocular findings alone, every person exhibiting exophthalmos with a low grade inflammation of the orbit should be given tests for tularemia. Streptomycin is most effective in the treatment of tularemia and causes the exophthalmos to recede within a few days. In the absence of positive tests for systemic disease such as tularemia, administration of antibiotic agents has not yielded good results. Only in cases of cellulitis of bacterial origin is exophthalmos relieved by the use of sulfonamides alone or sulfonamides combined with antibiotic substances.

Radiation—Employment of radiation has a dual purpose. Exophthalmos may be caused to disappear by two or three treatments with roentgen rays. The diseases of the orbit which most commonly respond are Mikulicz's lymphosarcoma, chronic inflammation and the exophthalmos associated with goiter. If the exophthalmos is not altered by roentgen therapy one may assume that the cause of the exophthalmos is other than one of the known conditions which usually respond. The delay incident to a trial of roentgen rays, so that in cases of inflammation or neoplasms in which the lesions are not susceptible to roentgen treatment the tissues may be sufficiently altered to retard further development of the disease. If satisfactory results are not obtained, roentgen treatments should not be long continued in cases of progressive exophthalmos unless surgical intervention is, for some reason, contraindicated. Roentgen therapy may be given to the orbit with little risk of causing blindness to occur as a result of cataract. Treatment may be given at intervals of several weeks if precautions are taken to protect the eyeball. In exophthalmos of hyperthyroidism, roentgen therapy has been found to be effective only in the malignant type of exophthalmos and then only in the early stages of the exophthalmos before permanent tissue changes have brought about so much fibrosis that full recession of the eyeball can hardly be expected.

Surgical—The method to be used in the surgial treatment of exophthalmos is determined by the situation of the lesion and its character. Neoplasms of the orbit that lie in the anterior half may be reached by frontal approach through the orbital outlet. Of the many methods of obitotomy that have been employed, only two are in common use.

An approach to the orbit through the palpebral fissure requires a wide external canthotomy. After retracting the upper lid the upper cul-de-sac is divided and the approach made through the orbital tissues in the superior temporal quadrant. The cornea is exposed during this operation and the eyeball is subject to permanent damage from trauma.

The frontal approach is made through a brow incision that divides the periosteum 5 mm. above the superior orbital rim. The periosteum is then carefully separated around the orbital margin where it is more firmly attached and where it meets the periorbita. Once the periosteum is separated at the orbital rim, the entire periorbita of the superior wall and most of the lateral and nasal walls can easily be separated by a nasal septum elevator. The periorbita can then be pulled forward and downward, permitting digital exploration of the contents of the orbit before the periorbita is opened. An incision through the periorbita can be made and oftentimes a tumor removed without cumbersome manipulation of extruded orbital fat. By this method 90 per cent of the tumors that lie in the anterior half of the orbit can be removed. This approach is followed by the least deformity and disfigurement from contracting scars.

The method described by Krönlein consists of a lateral orbital decompression which provides access to the posterior half of the orbit, such as tumors of the optic nerve. The Krönlein method offers, in some cases, advantages not obtained by any other method.

Within the past few years, transcranial approach to the orbit has become the method of choice for aneurysms, certain types of orbital neoplasms, most neoplasms situated in the posterior part of the orbit and for orbital decompression for malignant exopthalmos. The transcranial approach has the advantage of providing visual exposure of the contents of the posterior half of the orbit and the optic canal. Meningiomas of the orbit should be removed only by the transcranial route because of the involvement of the orbital walls and extension into the cranial cavity. Arteriovenous aneurysms, pulsating angiomas and cavernous angiomas should be operated on only by the transcranial route. In cavernous angiomas the vessel walls are so thin that uncontrollable hemorrhage is likely to occur unless a surgeon has access to the full length of the orbital vessels. Ligation of the common carotid and its branches in the neck may not be sufficient to control an orbital hemorrhage in pulsating exophthalmos, and in nearly all such cases operation should be performed only by transcranial approach.

Orbital decompression for relief of exophthalmos in hyperthyroidism may be accomplished by removal of the roof of the orbit, exposing the dura, or by removal of the lateral bony wall so that the contents are supported by the temporal muscle. Both methods are effective in suitable cases. Malignant exophthalmos with edema of the lids and chemosis may be steadily progressive even after decompression. In such cases this operation is not suitable. The transfrontal exploration of the orbit carries sufficient hazard to contraindicate its use in cases of exophthalmos of unknown cause unless the exophthalmos is advanced to a dangerous degree or is producing definite visual deterioration.

One should bear in mind that exophthalmos is sometimes present in malignant hypertension and in chronic, low grade inflammatory disease of the orbit with negative findings.

Exploration of the orbit in such cases is futile. The use of exploratory instruments, such as the trocar, in exophthalmos is never helpful and in many cases causes definite harm or complications that later become troublesome. Surgical exploration of the orbit should be undertaken only for the complete eradication of the cause and not for the purpose of obtaining specimens for biopsy. The exercise of restrained judgment in the selection of the type of treatment to be employed in cases of exophthalmos of undetermined origin will prevent many costly mistakes.

Sickle Cell Trait (Sicklemia)

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This is inherited abnormally in the structure of red blood cells characterized by change in shape from spherical and discoid to bizarre multi-pointed forms (fish-fin shapes) under conditions of anoxia.

Dominant characteristics: Occurs in approximately 8 per cent of Negroes. Rare in whites, mostly Mediterraneans.

Best demonstrated by stasis moist (vaseline sealed) preparation. Under proper conditions all of red cells change shape. Process reversed by admitting air.

Increased resistance of erythrocytes to hypotonic salt solutions.

No abnormality demonstrable in ordinary air exposed blood smears.

No symptoms or signs, no jaundice or anemia in majority of patients with this trait. At autopsy: sickled cells, capillary stasis and pools of blood around splenic corpuscles.

Within the sickle cell trait group, one to two in 100 (?) develop sickle cell anemia.

SICKLE CELL ANEMIA (Sickle Cell Disease)

History—Onset usually in infancy. Condition once manifest is continuous. Symptoms of chronic anemia: weakness, fatigue, dyspnea. Frequent respiratory infections. Recurrent febrile illnesses (hemolytic crises). Severe pain during attacks. Pains usually in joints and bones, but may be anywhere.

Occasionally epitaxis, priapism, central nervous system symptoms.

Physical Examination—Poor muscle tone and posture. Appear younger than stated age. Tall, slender with long extremities, tapered fingers, relatively short trunk. Tendency toward hypogonadism. Jaundice. Enlarged heart, systolic murmur. Hepatomegaly. Splenomegaly early, non-palpable spleen late. Leg ulcers in older patients. Joints often hot and swollen during hemolytic crisis.

Occasionally: Central nervous system signs. Tortuous retinal vessels. Congenital anomalies.

Pathology—Elongated, distorted, pointed red blood cells. Capillary stasis, thrombosis. Infarction, necrosis, fibrous tissue replacement of viscera. Evidence of increased red cell destruction: jaundice, hemosiderosis. Signs of anemia: pallor, degenerations. Congestive splenomegaly early; siderofibrosis and atrophy later. Hepatomegaly, prominent Kuppfer cells, cirrhosis. Gall stones common. Enlargement of heart without valvular lesions. Chronic leg ulcers with atrophic skin margins. Occasionally fat emboli (bone necroses). In patients with cerebral symptoms thrombosis of vessels.

Bone Changes—Hyperplastic marrow with red marrow in long bones. Superimposed necrosis, infarction and osteosclerosis. Majority of patients have no significant bone changes in x-ray, but some and particularly older patients have striking changes. These include: Skull, hair-on-end trabeculations. Spine—Flattening of vertebral bodies and occasionally collapse. Long bones—Patchy areas of opacity. Increased trabecular markings. Interosseous new bone formation. Thickened and irregular cortex. Collapse of head of femur.

Blood Picture—Sickled erythrocytes in sealed moist preparation or equivalent. Anemia, normocytic, normochromic, regenerative. Reticulocytes increased.

Blood smear: **Red Blood Cells:** Typical sickled cells (long, sharp double pointed, hyperchromic, with moth-eaten margins, and C, L, and S shapes) vary in number in different patients; usually are few. Oat shapes, elliptical, oval, irregular pointed forms and target cells common. Anisocytosis. Diffuse basophilia and Jolly bodies common. Nucleated reds usually demonstrable. Stippled cells occasionally.

Platelets: Increased. Often large clumps and elongated forms.

White Blood Cells: Formula variable. Usually shift right and left. Occasionally a slight eosinophilia. Mononuclears with phagocytized red blood cells demonstrable and some smears.

Sedimentation rate normal in uncomplicated cases in spite of severe anemia. (Sickle cells and poikilocytes do not rouleaux and thus settle slowly). Fragility test: Increased resistance to hypotonic saline. White cell count: 10,000-25,000; sometimes higher. Platelet count: Increased. Bleeding time, coagulation time, capillary fragility: normal. Bone marrow. Hyperplastic.

Other Laboratory Tests—Signs of increased red cell destruction: Increased icteric index. Negative direct van den Bergh. Urobilinogen in urine without bile. Dark stools with quantitative increase in pigment. Hypochlorhydria. Often albuminuria and cylindruria. Electrocardiographic changes.

Treatment—No specific known. Opiates for pain. Symptomatic; supportive. Usual antianemic measures of little value. Transfusion, if anemia severe. Value of splenectomy not proved.

Differential Diagnosis—Acute rheumatic fever. Infectious arthritis. Osteomyelitis. Rheumatic heart disease. Cor pulmonale. Acute abdomen. Septic fever. Hepatitis. Cerebral hemorrhage. Erythroblastic anemia. Myeloid leukemia.

Prognosis—Chronic course. Poor operative and maternity risks. Seldom live beyond thirty years. Death usually due to superimposed infection (tuberculosis, pneumonia, sepsis). Often terminal uremia or heart failure. May die in crisis.

The Management of Tonsillectomy*

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THE IDEAL tonsillectomy removes all of the tonsil, and nothing but the tonsil, with a minimum of trauma and hemorrhage. It is also to be desired that the patient approach the procedure with a feeling of confidence, suffer the minimum of discomfort and recover rapidly.

Like other surgeons, I have sought these goals. For many years I have availed myself of every opportunity to see other surgeons operate, adopting any point of their technique that seemed superior to mine. Therefore the technique described is in no way original, but has proved successful and satisfactory.

About ten years ago I conceived the idea of giving each post-tonsillectomy patient a mimeographed set of instructions. Primarily, this was done selfishly for my own convenience, and to save so much talking; but I found that patients liked them, and I believe that their use has added measurably to the satisfactory management of post-tonsillectomy convalescence. Strange enough, in a review of the recent literature, Haslam[1] is the only author who has indicated the value of giving the patient instructions in printed form, though I personally know Searcy has used them.

Post-tonsillectomy hemorrhage is always annoying and for years I have exerted every effort to prevent such occurrences, as have many other men, trying every procedure that offered any hope of success. About two years ago I adopted a combination of such procedures that was sufficiently successful that I am now able to report a series of 171 cases with only two hemorrhages, an incidence of 1.17 per cent.

Preoperative studies included examination of the heart, lungs and blood pressure. Preoperative laboratory studies included bleeding time, coagulation time, complete blood count and urinalysis. All patients were given a laxative the previous night; children were given an enema prior to the operation; breakfast was omitted in cases undergoing general anesthesia. Those entering the hospital the night prior to operation were given nembutal to insure a good night's rest.

Preoperative medication was administered as follows: No medication was given children weighing less than 30 lbs.; children from 30 to 60 lbs. were given from 1/750 to 1/400 gr.

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atropine; children weighing from 60 to 75 lbs. were given ¼ gr. codein and 1/400 to 1/300 gr. atropine; children weighing from 75 to 100 lbs. were given ½ gr. codein with 1/300 to 1/200 gr. atropine; adults undergoing general anesthesia were given ⅓ gr. pantopon and 1/50 gr. atropine; these drugs were administered as subcutaneous injections thirty minutes prior to operation. Adults undergoing tonsillectomy under local anesthesia were permitted to have a glass of orange juice one hour before operation, were given 5 gr. barbital or 1½ gr. nembutal forty-five minutes prior to operation, and ⅓ gr. pantopon fifteen minutes prior to operation. Ether was used for children; gas induction-ether for adults taking general anesthesia. Cases operated under local anesthesia had topical application of 2 per cent pontocaine, with an injection of approximately 20-30 ccs. 1 per cent novocaine (with 2 minims 1:1000 epinephrine added to each 30 cc. of novocaine). Those cases operated under general anesthesia were placed in a head-low or Trendelenburg position; those operated under local anesthesia in a slightly reclining chair. Four cases had previously been operated and the tonsil remnants were removed by dissection and snare; in all other cases the tonsils were enucleated with the Sauer modification of the Sluder instrument. Hemorrhage was controlled by pressure, ligature and suture, and there was no excessive bleeding in any case.

Postoperative orders in all cases included an ice bag to the neck (immediately for cases operated under local anesthesia and after reaction for cases operated under general anesthesia), cold non-acid liquids freely and 1/6 gr. to 1 gr. codein sulphate, subcutaneously, prn. Those desiring to smoke were permitted to do so. Liquids only were permitted the first day but this included milk and ice cream. Starting the first night, patients were allowed to use aspirin gargle as a throat wash but aspirin in all other forms was prohibited for forty-eight hours. No particular effort was made to force liquids the day of operation, but special emphasis was placed on an ample liquid intake starting the day after surgery. Two adults of advanced age were given glucose intravenously the first two days following surgery.

On being discharged from the hospital or clinic, patients were given mimeographed instruction sheets which gave full instructions with detailed explanations. (Copies are available for those interested). Each patient was given a powder blower (DeVilbiss No. 118) filled with powdered sulfathiazole; and was instructed to spray the tonsil fossae daily. After forty-eight hours aspergum or phenacetin-and-aspirin powders were allowed before meals and for the relief of pain. The older patients were instructed to use Dobell's solution as a throat wash. Those who had undergone adenoidectomy were instructed to drop a few drops of mineral oil in each nostril each night and morning; during the past few months this has been supplanted by prescribing 20 per cent sulfathiazole in water-in-oil emulsion, as nose drops, twice daily. All cases were given a prescription for 5 mg. tablets synkavite, one daily for ten to fifteen days. One hundred to 500 mg. ascorbic acid daily was also prescribed for cases operated during the past three months. All patients were requested to take one week off from their usual activities, but many returned to work at an earlier date. As the soreness of the patient's throat subsided, the appetite usually returned; if not, a tonic was given.

No unusual pathology or complications were noted in this series. In general, I believe I can say that these cases have been handled in a comprehensive and satisfactory manner, from the patient's point of view.

DISCUSSION

Personally, I think local anesthesia the choice for adults as there is less hemorrhage and definitely less shock with quicker recuperation. In this series of cases are included sixty-three adults for tonsillectomy only, of which sixty were operated under local anesthesia. The remaining three were over-apprehensive patients and one reacted so badly as to require hospitalization for three days with intravenous administration of glucose. Adequate preoperative medication allays apprehension and results in a smoother operation.

The following procedure was used for all cases operated under local anesthesia: 2 per cent pontocaine solution was applied to the fauces, pharynx and back of the tongue. Multiple injections of novocaine were made, circumscribing the tonsil; the tonsil was then retracted from its bed with a seizing forceps and 2 to 3 ccs. novocaine injected in the resulting sulcus. Thirty to sixty seconds were allowed to elapse between the last injection and the enucleation of the tonsil. I prefer to inject tonsil just prior to removal. The technique followed was to apply the ring of the instrument at the junction of the lower pole and posterior pillar, displacing the tonsil upward and outward out of its bed, guiding the tonsil through the fenestrum with the forefinger of the opposite hand, gently closing the blade at the point of cleavage between the tonsil and the anterior pillar. When the tonsil was removed, a pressure sponge was inserted and the patient's head bent forward so that saliva drained from the mouth and not down the throat. This pressure sponge was kept in place for approximately four minutes, and the pressure was adequate to stop the majority of the hemorrhage. Any bleeding point was picked up and ligated with Plain-O catgut; the "Coakely loop"[2] is ideal for this purpose. In cases operated under general anesthesia the pressure sponge was held in place for perhaps one minute; and on removal a gauze sponge packed in the fossa; the other tonsil was then enucleated, the sponge applied and the fossa later packed with gauze; the gauze was then removed from the first fossa, bleeding points were picked up and ligated as described above; and the procedure repeated on the second fossa. One of the advantages of enucleation with the Sluder (or similar) instrument, is that there is no bleeding until the tonsil has been removed; this is of particular importance when operating under local anesthesia. One can hardly blame surgeons who remove tonsils by dissection and snare for preferring general anesthesia. However, the Sluder instrument does not remove the adjacent lingual tonsil tissue. These little nodules of lymphoid tissue on the side of the tongue, contiguous to the tonsil fossa, should be picked up with forceps and removed with either snare or scissors; caution must be observed not to damage the ninth nerve which passes beneath the tonsil bed into the tongue[3]. The removal of this lingual tonsil tissue is usually followed by arterial hemorrhage which requires suture for satisfactory control.

Recent studies on the loss of hearing have placed added emphasis on the proper performance of adenoidectomy. While I prefer tonsillectomy under light anesthesia, I think adenoidectomy should be performed under comparatively deep anesthesia. The LaForce adenotome is an excellent instrument, but it is not possible to remove all of the adenoid tissue with it. I therefore supplement the use of this instrument with a Vovel adenoid curette and soft palate retractor and Hartmann tonsil punch. I have not found the Kelly adenotome to be as efficient as the LaForce. After trying several retractors, I have found the most satisfactory instrument in retracting the soft palate to be the "U.S.A. pattern retractor." The Yankhauer speculum is quite satisfactory. Hemorrhage is usually controlled by packing a pad of gauze tightly in the nasopharynx, but on occasion I have found it necessary to suture bleeding vessels in the nasopharynx; the Dupuy-Weiss needle is the most satisfactory needle for this purpose. Occasionally I left a postnasal pack, secured by a strong black silk thread, brought out through the mouth and the end attached to the cheek with adhesive tape. This pack can be removed after a couple of hours without any difficulty; and should the patient dislodge it, it can be easily withdrawn by the string.

A brief discussion of other instruments may be of some value. The Sluder-Ferguson mouth gag is far superior to any that I have seen; I have had only one case of pinched lips with it in twenty years' use. The Weder tongue depressor has a better curve for retracting the tongue. A tonsil-seizing forceps is unnecessary during enucleation with the Sluder instrument but is useful for exerting traction on the tonsil when injecting novocaine; any tonsil-seizing forceps is satisfactory. The ordinary curved tonsil hemostat is preferred for picking up bleeders in the tonsil fossa; but for picking up a bleeder at the base of the fossa, Alexander or Farrington forceps are definitely superior. Arterial bleeders requiring sutures may be sutured more easily with Dupuy-Weiss needles or a similar type; at times using a mattress suture. In tying this type of suture the technique of first placing a slip-noose knot and then a tie is more satisfactory than attempting to tie a square knot. A Davis or Wood retractor is definitely superior to the Hurd. I have found the Metzenbaum tonsil scissors to be most satisfactory.

Whitney[4] compared results of tonsillectomy performed with a variation of the Sluder instrument with tonsillectomy with dissection and snare; among other conclusions, he wrote, "Tonsillectomy when properly done with an automatic mechanical device is faster and cleaner than when done by the snare and dissection method;" but thought that the only advantage. Those who prefer to remove tonsils by dissection and snare will find ample descriptions in the literature[5 6 7]. Waring[8] is one author that minimizes the danger of hemorrhages. In describing "suction tonsillectomy," he says. "As a rule the fossa is perfectly dry." That I must see to believe. Morey[9] describes "Bloodless Tonsillectomy," using 50 ccs. of .5 per cent novocaine. The English apparently are believers in injecting large amounts of novocaine as Moulden[10] also describes the use of .5 cc. 3 per cent novocaine in the hard palate in the region of the posterior palatine foramen on each side; then 11 ccs. .5 per cent novocaine in each of the upper and lower poles (a total of 44 ccs.); he states, bleeding is slight. It is rare to have to tie off a vessel and this is done without discomfort." In contradistinction, Hoover[11] does not use any topical application, recommends the injection of 3 cc. 1 per cent novocaine behind the retracted tonsil, waiting five minutes before operation; but uses 6 ccs. of 1 per cent novocaine for a complete tonsillectomy. Hayes[18] reports eighty-two consecutive unselected cases operated under sodium pentothal anesthesia without an airway; and states the surgeon "was so impressed he would use no other method of anesthesia."

Perhaps the greatest interest of this group would be in the control of hemorrhage. Post-tonsillar hemorrhage may be classified as primary, delayed primary and secondary. Primary hemorrhage occurs during the operation and should be immediately and completely controlled. It is a simple matter for a skilled operator to control such hemorrhage, and there is no justification for permitting a patient to leave the operating room while still bleeding.

Delayed primary hemorrhages occur within twenty-four hours and may be the result of a ruptured blood vessel whose wall was damaged during surgery. Over-apprehensive patients who hauk and clear their throats too vigorously and too often may also open up a bleeder. Improperly placed ligatures may slip with resultant bleeding. Delayed primary hemorrhages require the same procedure as primary hemorrhages; namely, ligature and suture.

Secondary hemorrhage is an entirely different matter and may be considered one of the most annoying problems of the otolaryngologist; and the literature is replete with papers describing various methods of controlling hemorrhage, only a few of which are mentioned here.

Early in 1945 I learned indirectly[13] that Neivert's report before the New York Academy of Medicine gave Singer full credit for suggesting that secondary tonsillar hemorrhages in this country were primarily due to the free use of acetylsalicylic acid; Singer stated that such hemorrhages were almost unknown in Central Europe, as aminopyrine was the drug of choice there. To substantiate his contention, Singer[14] operated a series of seventy-five cases in which all forms of salicylates were forbidden, and in which there were no hemorrhages. Neivert[15] conducted a series of experiments and reported results which indicated (1) that the use of acetylsalicylic acid induced hypothrombinemia and (2) Vitamin K neutralized this effect, maintaining a normal prothrombin content of the blood. In an uncontrolled series of tonsillectomies he reported "an incidence of late tonsillar hemorrhages of almost 10 per cent accompanying our former routine, which called for free use of salicylates alone;" compared to an incidence of only 1.4 per cent in cases which combined the use of acetylsalicylic acid and synkavite. Neivert's work has since been confirmed by Preston.[16]

In his experiments Neivert used 10 mg. synkavite to .6 gm. acetylsalicylic acid, but his paper was not printed until July, 1945. My series of cases was started May 1, 1945; not knowing what dosage he suggested, I prescribed only 5 mg. daily. When I read his report I already had sufficient experience to feel that the practice was beneficial and did not routinely increase dosage; in suspicious cases I prescribed 5 mg. three times daily.

Incidentally, synthetic vitamin K preparations (of which synkavite is one) have been found to be more potent than the natural vitamin K[17]. Again, natural vitamin K in enormous doses has no toxic effect and synthetic vitamin K is well tolerated in therapeutic doses.

Ascorbic acid deficiency is a known cause of capillary fragility; and aspirin has been shown to cause increased (urinary) excretion of ascorbic acid[18]. Apparently Myerson [19] was the first to suggest that vitamin C deficiency is a factor in post-tonsillar bleeding and recommended "extra fruit juices for a few days prior to operation." One year after his report on the efficiency of vitamin K in preventing secondary hemorrhage, Neivert et al.[20] reported a series of investigations showing the efficiency of ascorbic acid in counteracting the prothrombinopenic effect of acetylsalicylic acid; 440 mg. of ascorbic acid to 40 gr. acetylsalicylic acid afforded the patients full protection. Neivert has indicated that in a later report he will compare the efficiency of vitamin K and ascorbic acid, and it should be interesting.

While these reports are quite impressive, there is some probability that post-operative infections of the fossae are also contributory. Many men feel that such infection is quite common, though a review of the recent literature does not reveal any studies or reports to substantiate such opinions. As long ago as 1925 Shea[21] felt that post-operative infection with Vincent's angina was a frequent cause; and used 6 per cent neo-arsphenamine in glycerine in suspicious cases. Sanders[22] uses bismuth or sodium cacodylate in suspicious cases for the same reason. McLaurin[23] has had secondary hemorrhages in cases that used aspirin and from 40 to 80 mg. synkavite daily; and found the prothrombin time normal; which led him to the same conclusion.

With the advent of sulfa preparations and free use of sulfa powders, it occurred to me that the routine spraying of tonsil fossae during post-operative convalescence might be beneficial. I first tried this procedure only in cases that could come to the office daily for personal attention. As the procedure seemed beneficial I then began prescribing powder blowers with powdered sulfathiazole for all cases, starting the day after operation. When I adopted the practices of prescribing synkavite, I continued to prescribe spraying with sulfa powder.

Some adenoidectomy patients complained of uncomfortable dryness of the nasopharynx. I first attempted to solve this problem by suggesting a few drops of plain mineral oil in each naris night and morning. Since the sulfa powder seemed effective in the fossae, it occurred to me that an emulsion of a sulfa drug would be better practice. Accordingly, I took the matter up with the Research Department of Smith, Kline and French; who suggested a water-in-oil emulsion, using Spans and Tweens,* and generously furnished a supply of micraform sulfathiazole. After numerous experiments the following formula was found to be the most satisfactory:

Heat nine parts light mineral oil at 60° C. for thirty minutes.

Add one part Tween 81 and shake vigorously.

Add three parts distilled water heated to 75° C. and shake until cool.

Add 20 per cent micraform sulfathiazole crystals.

Inasmuch as these preparations are not commonly available, the following prescription may be used:

℞
Powdered Sulfathiazole ....dr. iss
Gum Acacia ....dr. i
Light Mineral Oil ....dr. v
Distilled water q.s.ad. ....oz. i
M. ft. Emul.
Sig.—One-fourth dropperful in each nostril twice daily.

This emulsion is thicker, but satisfactory.

From the above, it is obvious that the best way to handle secondary post-tonsillar hemorrhage is prevention. However, should one have a secondary hemorrhage, what is the best way to handle it. A review of the literature would indicate almost every procedure from an ice-bag to transfusion. It is generally agreed that the first thing to do is to administer proper sedation, usually morphine, and my experience confirms this. Secondly, the fossae should be cleansed with sponge forceps or some similar instrument. Some of the hemorrhages will be controlled by simple pressure. Ceanothine was strongly recommended at one time, but results were disappointing. Oxalic acid has been recommended but after trying it on a few cases without apparent benefit, I discontinued it. I have even tried cauterization with the actual cautery without being impressed with its use. Noyes[24] reports control of 125 cases out of 126, over a twenty-year period, by injection of 1 per cent novocaine (with 1 minim adrenalin to the cc.); but this method has not been successful in my hands. Potter[25] recommends a "tonsil fossa surgical powder" consisting of ethyl amino-benzoate 5 per cent, alumin 10 per cent, thymol iodide 35 per cent and tannic acid 50 per cent; I have had no experience with this preparation. Haslam[1] suggests the use of hydrogen peroxide, ferric chloride, tincture of benzoin, and particularly likes the application of 50 per cent silver nitrate. McLaurin[26] strongly recommends surgical pituitrin. Cunningham's[27] report of successfully controlling late secondary tonsillar hemorrhages by spraying sulfapyridine in the fossae is most impressive, but I have not had an opportunity to try his method since reading his article. If the patient loses much blood, transfusion should be considered; and should not be delayed or considered a "last resort."

In the past my most successful method has been to administer sedation, remove the blood clot and apply a pressure sponge moistened with Monsel's solution. In this series of 171 cases, there were only two who had hemorrhages. One was a twenty-four-year-old woman who lived out of town and who reported to me one month later that she had a hemorrhage; I did not see her at the time of hemorrhage, but am including it in my report. The other was a nineteen-year-old boy who, three days after tonsillectomy, attended a basketball game and cheered vigorously; returning home he began spitting up blood. When he called me, I merely wiped out the fossa with Monsel's solution and this simple procedure controlled the hemorrhage.

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*Surface detergents and wetting agents manufactured by the Atlas Powder Company, who were generous to supply for experimentation.

Occasionally there is hemorrhage from the adenoid area. Both delayed primary and secondary hemorrhages are best controlled by a post-nasal pack left in place for twenty-four hours.

Elderly patients may be successfully operated but require greater care. I have operated on a number of patients over sixty years of age, and a few over seventy. Such patients should be kept hospitalized for three or more days, and should have glucose intravenously daily until their oral fluid intake is adequate. Of course they will require longer postoperative care, but otherwise they are handled in the manner described above.

Singers, professional or amateur, require certain care to protect their voice. Care should be taken that the pillars and pharyngeal muscles not be damaged and that hemostasis is obtained without distortion of the muscular relationship. After the third day it is my practice to insist that they chew gum frequently; and after the seventh day, I request they sing a few scales, very softly, daily increasing the period of practice and volume. By observing these precautions, no impairment of voice has been noted.

The proper management of tonsillectomy includes exerting sufficient care to protect the patient from aspirating foreign bodies in the lungs. There are many reports of such incidents in the literature, possibly the most interesting being Womack's[28] report of a foreign body in each lung following tonsillectomy. Such reports indicate the advantage of the head-low position, which also gives some measure of protection from aspirating blood, and mucus. LeJeune[29] routinely aspirates all blood and mucus from the tracheo-bronchial tree, after tonsillectomy under ether anesthesia.

In conclusion, it has been the intent of this paper to present the following:

1. A review of recent literature on the subject.
2. A technique of tonsillectomy and adenoidectomy which has been practiced for several years and found to be both successful and satisfactory.
3. The value of giving the patient printed instructions.
4. A discussion of the causes of secondary tonsillar hemorrhages; and methods of preventing and controlling them.
5. A series of 171 cases operated from May 1, 1945, to March 31, 1947, with an incidence of only 1.17 per cent post-tonsillar hemorrhage.
6. A routine of post-operative care to provide the maximum comfort for the patient.

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The Family Looks to the Medical Profession

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I WANT THE medical profession to see and to feel as I do how the allied professions of pharmacy, dentistry, and nursing are looking to doctors for guidance in the problem of cancer. These professions do not want to give incorrect advice to the laymen and yet too often the dentist, druggist, the nurse, and the lay agency of the American Cancer Society are the only agencies to whom the layman will bring the cancer problem. The program of the American Cancer Society is launched along three lines of attack: education, service, and research. The research program for the state of Mississippi, for the time being, certainly, must be carried out at a national level. The educational program of the American Cancer Society is directed at the layman. The uninformed man back in the community where he lives is getting information on cancer and it is of the utmost importance that this educational program be directed with care if the layman is to get the correct information, with an intelligent view of the cancer problem and not a frustrated fear and panic. The American Cancer Society is trying to conduct this program of education through the schools, carefully handled radio talks, civic groups and church agencies. The service program of the state of Mississippi has grown to such proportions that it is with difficulty we can keep this program in the bounds that it was intended. This program will only be successful in the direct proportion to the cooperation that is given us by the medical profession.

Note how the patient's application is handled:

1) The patient's name, address, nearest relative, occupation of wage earner—this information is important to us because it gives us some idea of the social standing of the patient in the count;

2) Can he meet any part of the expense?—so often an application comes in with this important question left blank;

3) Tentative diagnosis—you as physicians have a right to request diagnosis of any patient that you may suspect of having cancer;

4) Date of last examination—important because it gives a definite idea of how recent your findings are;

5) How long has present lesion existed? Any discharge, odor, metastasis, etc.—not of importance to the American Cancer Society, but to the medical profession;

6) Is patient amenable to treatment in your opinion, medically indigent? The program of the American Cancer Society is based on that, and that alone. This service program is supposed to be put in the hands of patients who are medically indigent and cannot afford to pay for treatment. The program of the American Cancer Society can never become, if it is to be successful, one that will handle a patient who is perfectly able to pay for medical services. We are interested in helping you provide medical service for the patient who is medically indigent and who cannot afford to pay for treatment.

7) Has the patient ever been treated for cancer, and if so, by whom? This is of importance and so often this question is never answered and yet over the telephone an infuriated physician will call and ask why we did not send his patient to Dr. Jones when the application has given no information whatso-

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ever.

8) Does the patient agree to surgery, x-ray, etc.,—who should be in better position to ascertain this information than the referring physician?

9) Is the patient ambulatory?

10) Additional information and cancer history held by the physician. Applications, when they reach the office of the American Cancer Society, are carefully studied and in cases where there is any question, the advice of Dr. A. L. Gray, who is the Medical Consultant of the American Cancer Society and who under the State Board of Health, or of a local physician is requested. This was easy when we were handling only a few patients a week, but now our patient load is topping 600 and the American Cancer Society must have the cooperation of the medical association if we are to go forward. I quote from a recent letter from a woman, hoping it gives you an idea of what I mean when I say we must have the cooperation of the medical profession:

> "We women read articles telling us not to neglect having check-ups and we do want to have them and avoid cancer if we can. But should an ordinary M.D. take it into his hands? There was one in this town that did. The patient, a girl, had a lump in her breast and she went to this doctor's office and he removed it and didn't even have a nurse with him. The girl went to a specialist after that, but it was too late and she lived only a few months. How do we ordinary women know whom to go to? This is the main thing I want to know. My grandmother, my uncle, and my father have all been victims of cancer. We are beginning to be concerned in order that we might keep well. Does the average doctor know how to make these tests?"

The answer to that woman's question should be this: The Mississippi State Medical Association in 1947 appointed a Cancer Committee; Dr. So-and-So is a member of this cancer committee from your district. I am sure if you will go to this physician and talk to him he will be glad to give you advice. This woman, according to the phraseology of her letter, is well-informed and well-read. She is not an indigent case, and wishes correct information. I am hoping that every local society will appoint a Cancer Committee, so that we may refer these people to them.

Mr. Smith comes into the office, concerned about this or that symptom, and of course, we refer him to his family physician. But the problem disturbing me is that the patient says: "I have no family physician. I want to talk to a physician who knows particularly about cancer." This Cancer Committee would serve this patient, and give him that confidence in the medical profession that we feel. It is the purpose of the Mississippi Division of the American Cancer Society to make available to the man who cannot afford to pay for it, adequate treatment with all the resources and facilities that the medical profession can offer. Our educational program must move forward that every individual in the state of Mississippi may know what to do about cancer. For many, the American Cancer Society, working through and with the medical profession, is the only channel open. And with so many looking to us, we shall not, we cannot, we must not fail.

The patient with tuberculosis upon admission to a hospital becomes an individual with a broken body and disturbed mind and not just a pair of lungs sent in for repairs. The sanatorium is a place where patients' lives are carefully regulated. The rest periods are not interrupted as they would be at home by well-meaning but ill-advised friends. The x-ray equipment needed to record the courses of the disease and as a guide in treatment is always at hand. Henry D. Chadwick, M.D. and Alton S. Pope, M.D., The Modern Attack on Tuberculosis, The Commonwealth Fund, Revised, 1946.

Strangulated Hernia Reduced en Masse*

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THE REDUCTION *en masse* of a strangulated hernia is indeed a rare occurrence, and creates quite a surprise when encountered. It is only by this occasional surprise, and by the collective review of the experience of others, can one appreciate the real detail of the interesting picture. This accident is best defined as the displacement of the hernia tumor without relief of the strangulation, and occurs, according to accumulated records, in 0.3 per cent of strangulated hernias. Corner and Hewitt collected 1618 cases of strangulated hernia from the records of St. Thomas' and St. Bartholomew's hospitals and found only five cases of reduction *en masse*. Berger reports that the incidence of strangulation is 2.5 per cent, and upon the basis of his calculation only one in 13,000 hernias undergo reduction *en masse*. In the study of our last 112 hernias operated at Field Memorial, fourteen were strangulated, and of the fourteen strangulations, three were found reduced *en masse*.

It is felt that this experience is unusual enough to warrant recording, and since there is no recent resumé of the subject since that of Pierce in 1931, an effort is made to bring it up to date.

Historical Review

The first published case of this disorder was that of Saviard, in 1693, and although proved at autopsy, very little comment was made regarding the condition. The possibility of the accident was not appreciated until, in 1727, LeDran presented the second case. This presentation created quite a discussion, and many prominent surgeons including Louis doubted the existence of such a lesion. It was not until 1765 when De Lafaye reported two more cases that the accident of reduction *en masse* of a strangulated hernia was recognized as a fact. In 1846, Teale published the first statistics comprising twenty-six reductions *en masse* and Steubel (of Leipzig) was able in 1864 to collect seventy-six cases.

In 1908, following four personal cases, Corner and Howitt published a general review, based on 137 reductions *en masse*. At various intervals since that time additional reports have been made, including in an excellent resumé by Pierce in 1931 presenting 193 occurrences of the accident. St. John reported three in 1933, Nason and Mixter reported five in 1935, Simon and Benson reported one in 1940. Dunn's one and our three increase the total reviewed by Pierce to 205.

The following case report serves to illustrate the typical history and physical observations in patients with hernia reduced *en masse*.

Report of Cases

Case I: P. I., a man 68 years of age, entered the hospital acutely ill, complaining severely with pain and soreness over the entire abdomen. Duration twenty-four hours. His past history was negative except for an old left inguinal hernia of twenty years' duration. The hernia had given him no trouble before, and always easily reduced. A comfortable, satisfactory truss had been worn. While at work twenty-four hours before admission, the hernia came down, and he was unable to get it back. He summoned a doctor who saw him two hours after the onset, and at this time there existed an elongated, pear-shaped mass low in the left groin. It was tense, sore, and painful, and produced nausea and vomiting upon pressure. Morphine was given, and after some manipulation, succeeded in reducing the mass. The patient was relieved for some several hours, but the pain returned more severe, persistent, and radiating across the abdomen, associated with nausea and vomiting. This continued throughout the night, and the following morning the doctor was again called. He insisted that the patient go to the hospital, fearing that he had injured the strangulated loop of bowel.

The general physical examination was essentially negative. The heart was apparently normal and the blood pressure was 110/60;

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temperature 100.4° and the pulse 86; respiration 26. The abdomen was moderately distended, and a noticeable fullness in the lower left quadrant. There existed muscle guard on both sides, but tenderness and rebound tenderness were very noticeable in the lower left side just above the groin. An indefinite tender mass could be partially outlined from above and through the rectum. The right inguinal ring was normal, but the left was dilated. However, the canal was empty and no mass or sac could be felt through this ring and there was no impulse on coughing. Both testicles were in the scrotum and showed no abnormality.

Laboratory examination of the urine showed the color to be amber, reaction acid; specific gravity 1.016; trace of albumen; negative sugar, and negative microscopic. White blood count 21,000; and polys 90 per cent.

Operation: Under spinal anesthesia a high inguinal incision was made. The inguinal canal was opened and found to be empty. A mass could be felt through the canal but could not be reached, so the wound was opened upward in the plane of the internal oblique and transversalis fibres. This exposed a firm, bluish, thick walled mass depressing the peritoneum. The mass was opened; bloody serous fluid escaped, and about eight inches of discolored bowel was removed and returned to the abdominal cavity, after being assured of the circulation. The sac was pulled back into the canal, normal relations reëstablished, ligated at its neck and amputated. A Halstead repair was done. The operation was well tolerated and the postoperative course uneventful.

The other two cases mentioned were right-sided affairs and both the hernial masses were found in the properitoneal space. They differed, however, in their onset. One occurred spontaneously and without any apparent cause. The other was discovered after a hard horseback ride driving cattle. The surgical procedure was practically the same, although we feel that the abdominal approach would be more desirable.

Etiology: A hernia reduced *en masse* consists in a displacement of the sac and its contents into a anomalous position. Despite the apparent reduction, the relation of the sac to its contents remains undisturbed. This condition usually results from pressure or taxis, but it may occur spontaneously.

In 138 cases, eighty-three or 60 per cent were reduced by a physician, forty-eight or 35 per cent reduced by the patient, and in seven or 5 per cent reduction was spontaneous. From this we determine that pressure or taxis is responsible for the accident in 95 per cent of the cases. This fact is one of the very best reasons for the substitution of early operation in all strangulated hernias. In the earlier days the accepted method of treatment of strangulated hernia was taxis, everyone taking a try at reduction before resorting to operation. Before the development of an aseptic technique the custom of reduction consisted in the division only of the extra-peritoneal tissues, without opening the sac (fear of peritonitis). This and other equally blind procedures resulted in eight cases of reduction *en masse*. This accounts for the higher proportion of false reductions by physicians in the report of the last two centuries. If only the cases reported in the last fifteen to twenty years were considered it would be found that the doctor was responsible in only 35 per cent. It is probable, however, that we will have prolonged, and violent taxis practiced by the patient or his family and the occurrence of reduction *en masse* will continue.

Comment: In the majority of the cases reported sufficient description was found to show that in 90 per cent of the entire sac and contents were displaced to a space between the peritoneum and the muscle layers of the abdominal wall, defined as the properitoneal space. In 15 per cent there was a portion of the sac still present in the inguinal canal, and the strangulated viscus in the properitoneal position. In 7½ per cent the false reduction occurred by rupture of the sac and displacement of only the strangulated contents of the sac. The strangulation persists from pressure at the neck of the sac or at the point of laceration of its wall. In this instance the mass may be behind the pubis, or in any direction opposite the line of tear. The fourth type or possibility of reduction with continued strangulation occurs when strenuous taxis is used and a ring of the fibrous neck of the sac is torn off and remains around the loop of bowel free in the abdomen. There has been no recent report of this type and probably will become of historical interest only since there is less and less violent manipulation.

Certain conditions must exist before any of the situations mentioned above can occur. The neck of the sac must be large enough to allow the entrance of the bowel or omentum and yet narrow enough to imprison and retain the incarcerated contents. The sac itself must be sufficiently mobile within the hernial canal to permit it to be forced upward and inward. Likewise, sufficient mobility of the neck of the sac, together with the parietal peritoneum immediately surrounding the hernial ring, is necessary to provide room for the "reduced" mass. The degree of mobility of the neck of the sac determines to a large extent the position which the falsely reduced mass will occupy. The neck may be fixed but the adjoining peritoneum could be so lax as to form a properitoneal pouch. If both the hernial neck and the neighboring peritoneum are fairly lax the entire mass will be pushed forward, and therefore, found projecting into the abdominal cavity.

Halstead suggests that in some of the occasions in which the reduced mass was found in the properitoneal space that a true congenital inguino-properitoneal diverticulum existed. Also certain congenital defects associated with an undescended testicle. Pressure of an ill fitting truss is considered an important factor in inviting this accident. In the small percentage of the cases spontaneous reduction *en masse* may occur, and several days or even weeks may elapse before complete intestinal obstruction supervenes.

Diagnosis: The history is probably the most important single diagnostic factor. There is a usual story of hernia of years' standing that has become strangulated and reduced with more or less difficulty. The absence of the characteristic gurgling, an unusual amount of discomfort, a sudden giving away at the time of reduction of some of the features noticed. Only partial or temporary relief follows the maneuver, and the vomiting, colicky pains, and distention usually continue. The patient soon presents obvious symptoms of intestinal obstruction.

The local diagnostic signs are quite variable. In about 3 per cent there will be found an elevation of the testicle on the affected side. The inguinal canal is usually found empty and a dilated internal ring. In about 45 per cent of the cases reviewed there was very little, or no local abnormality found. In 35 per cent a mass was felt high in the canal or just above the internal ring, while in 16 per cent a tumor could be well outlined in the lower quadrant. Unless the condition is on the left side very little is determined by rectal examination.

It was found in the study that 88 per cent of the cases were males, and 12 per cent were females. The right was involved in 65 per cent and the left in 35 per cent. In the entire series the average was forty-nine years. The youngest patient was thirteen years and the oldest seventy-nine. Sixty-nine per cent were between the ages of thirty and sixty, 23 per cent over sixty and only 8 per cent were found under thirty years of age.

In the majority of the earlier reports an inguinal incision was used, but the later ones reported used the abdominal approach. A lower rectus incision, we feel, is the procedure of choice. It is necessary to incise the neck of the sac to liberate the bowel or omentum, and in the event of a resection the advantages of doing so through a laparotomy incision are obvious. When the sac has been emptied and appropriate disposition made of its contents it can be inverted into the abdominal cavity and amputated after transfixing the neck. If the patient's condition is good enough, it may be advisable to repair the hernial canal through a separate incision.

SUMMARY: 1 The reduction *en masse* of strangulated hernias is of rare occurrence, being observed in only 0.3 per cent according to all reports available. This gives an incident of the accident in only one in thirteen thousand cases.

2. Most frequently found in the middle aged made subjects with a right sided inguinal hernia.

3. The strangulated mass is usually forced to a properitoneal position. The physician was responsible in 60 per cent of the cases.

4. The presence of a developed or performed properitoneal pouch is the greatest factor in permitting the accident. This condition is formed often by an ill-fitting truss, but there could be congenital inguino-properitoneal diverticulum.

5. The diagnosis is made from the history of continuance of symptoms of intestinal obstruction after the apparent reduction of the strangulated hernia.

6. Early operation is always indicated for the condition carries a mortality of 70 per cent in the femoral group and 40 per cent in the inguinal type.

7. The reduction *en masse* of a strangulated hernia is plenty excuse for the abandonment of taxis by the medical profession.

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DISCUSSION

Dr. Shands (Jackson)—Dr. Field has made a clear and concise exposition of this subject. I have been a member of this association for the past forty-two years. To my knowledge this is the first time this subject has been discussed on our state program. The salient facts have been so well presented by Dr. Field, there is not much left to be said.

The important point to be learned from Dr. Field's quite unusual experience with three cases of this kind, and from the review of the literature on this subject, is that taxis is a dangerous procedure when applied to incarcerated hernia. Immediate operation is the procedure of choice in strangulated hernia. Strohmeyer states emphatically, "Do not let the sun rise on a strangulated hernia if first seen at night, and do not let the sun set upon a strangulated hernia if first seen by day."

The pathogenic symptoms of reduction of strangulated hernia are those of intestinal obstruction after the disappearance of the tumor from the hernial ring. As to the technique to be employed in the operation, if the patient is in good condition and the surgeon is led to believe that gangrene has not taken place in the intestine, it is my belief that the best procedure is to operate through a long incision over the inguinal ring so that when the hernia has been brought down through the elongated incision with no unnecessary interference with the continuity of the intestine, a radical operation can be performed. In case the patient's condition is serious and one is led to believe that intestinal gangrene may be present, it is better to make a right rectus incision, bringing the tumor out and then if intestinal gangrene is present not to do an immediate anastomosis, but rather to bring both ends of the bowel out of the wound, removing the gangrenous part and leaving the closure of the fistula for a later procedure and, still later, a radical cure of the hernia.

This procedure in cases of strangulated herniae with gangrenous bowel was first called to my attention by Dr. John Young Brown in a paper presented before the meeting of the Southern Surgical Association in New Orleans in 1907. I am sure the information I obtained from Dr. Brown has enabled me to save several lives which would otherwise have been lost. In emergencies of this kind of course, it is entirely impossible to prepare the bowel by giving sulfasuxidine or any of the newer intestinal antiseptics. Honyhan has stated "There is no law more binding on the surgeon than that which prohibits the resection and immediate end to end anastomosis of a bowel in a case of acute intestinal obstruction."

In closing, it is well to stress the fact before surgical conferences that we have no operation in surgery more generally efficient than the radical cure of hernia. Certainly there is no condition in which failure to apply the proper remedy for various reasons takes place more often. Today there must be twenty or thirty thousand people in Mississippi suffering from herniae—this would be enough work to keep all the surgeons of the state busy for a year or more doing hernia operations if arrangements could be made to have all of the patients properly treated.

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Dr. E. E. Benoist (Natchez)—This case recalls to me the only case of its sort that I have encountered in my own practice. Some years ago I was called to see a man of about seventy years of age who had what appeared to be a strangulated hernia. After sedation, the hernia was apparently reduced. The patient, who had already been nauseated, began to have emesis and abdominal pain. A diagnosis of intestinal obstruction was made. He was hospitalized, and, at the hospital it was decided that surgery would be necessary. Incision was made as usual for hernioplasty. A loop of small bowel was found to be strangulated through the internal ring. The internal ring was mobile, as it always is mobile, its edges were thickened. The ring with its hernia had simply been pushed back behind the musculo-fascial wall of the abdomen. In other words, when reduction of the hernia originally was done, the bowel had slid back through the external ring and inguinal canal and had carried the internal ring back into the abdomen with it, instead of slipping through the internal ring as it does in the majority of instances of strangulation with reduction. Thus, with no palpable mass at hand, I still had had a strangulated hernia only did not know that I had had it. Incidentally this patient made an uneventful recovery after operation. It will be recalled in this connection that the internal ring is really made up of peritoneum and areolar tissue, hence is mobile. After so long a time it becomes thickened at the edges, and if small, offers a real obstacle to reduction of a strangulated viscus.

DR. W. H. FRIZELL (Brookhaven)—Let me commend Dr. Field for his very excellent presentation of this very important and frequent disability which we so often treat too lightly, for every hernia is potentially a most serious condition and for that reason I would like to stress early and prompt radical surgery in every case before permanent injury is done either by manipulation or strangulation. To further stress early operation let me relate one case: White man, aet. about 70, a grocer went to work at 8 a.m. feeling well, was seized by an attack of strangulated hernia, was carried immediately to the hospital and within two hours was operated and obstruction relieved, the intestine pinked up and wound closed, recovery quick and uneventful.

All patients with any type of hernia, if at all operable, should be advised to have prompt operation before strangulation occurs for any type is serious. Percentage of mortality is extremely high in these cases.

The Cancer Problem in Mississippi*

FELIX J. UNDERWOOD, M.D.,
Executive office, Mississippi State Board
of Health, and
WILLARD H. PARSONS, M.D.,
Chairman, Cancer Committee, Mississippi
State Medical Association

THE PRESENTATION of this paper is part of the plan of the Cancer Committee of the Mississippi State Medical Association to activate a program for the control of cancer which would halt the current increase in the number of deaths from this disease in this state and which, it is hoped, would reverse the current trend. The achievement of these objectives is chiefly the responsibility of the medical profession. There is no other group, indeed, qualified to undertake the task.

The cancer problem in Mississippi, like the problem in the nation as a whole, demands immediate accurate evaluation and immediate effective action. It is a personal, not an abstract, problem. The incidence of the disease has so increased that one out of every eight persons in this room has cancer, or will later develop it, and one out of every two of the families represented here has had, or will have, personal experience of it. It is a constantly increasing menace in medical practice. And the paradoxical situation has arisen that while the profession must serve the medical needs of the public in respect to it, it must also allay the fears which are the inevitable result of the campaign of education instituted to inform the public concerning it, and thus to save their lives.

THE MAGNITUDE OF THE CANCER PROBLEM

Actually, we have no really exact knowledge concerning the magnitude of the cancer problem. Cases of it are not well reported as yet, and estimates of its incidence must be arrived at indirectly. The most accurate index of the task which faces the profession is obtained from a study of the deaths due to the disease. In 1930, the total number of deaths from cancer in the United States was 115,265. In 1944, fifteen years later, the number was 177,171.

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*Presented before the Section on Hygiene and Public Health of the Mississippi State Medical Association at the Seventy-Ninth Annual Session in Biloxi, Mississippi, May 6-8, 1947.

In 1930 the death rate per 100,000 population was 93.7 per cent. In 1944 it had risen to 130.2 per cent, a percentage increase of 39. For the state of Mississippi the increase has been even greater. In 1930 there were 1,053 deaths from cancer and the rate per 100,000 population was 52.4 per cent. In 1944 there were 1,636 deaths and the rate was 82.2 per cent, a percentage increase of 51.

In Mississippi, in 1930, cancer as a cause of death ranked sixth in the list and was responsible for 4.3 per cent of the deaths in the state. In 1945 it ranked fourth and was responsible for 8.5 per cent of the total deaths. Part of the change can undoubtedly be due to an actual increase in the number of deaths from the disease. Racial differences are also important. In the white population of Mississippi the percentage of total deaths caused by cancer increased from 6.2 per cent in 1930 to 11.1 per cent in 1945, while in the non-white population the respective percentages are 3.2 and 6.4.

Cancer deaths in a given area furnish a good index of the local problem, but for its full comprehension there must also be some estimate of the number of cases of the disease within that area. Such an estimate was made in Warren County, through the coöperation of the local physicians and hospitals. At the time of the study, in this county of approximately 36,000 people, there were 228 known cases of cancer in living persons. If this rate is applied to the entire state of Mississippi it is evident that at this same time there must have been 12,500 known cases of the disease. This is not, however, the whole picture. It makes no allowance for undiagnosed cases of the disease, which represent at least a third of the known cases, and bring the total figures to between 16,000 and 20,000 cases. When the number of deaths each year is considered in relation to the estimated number of active cases of the disease the magnitude of the problem of cancer becomes self-evident.

Race, Sex and Age—In the 1,636 deaths from cancer which occurred in Mississippi in 1945, 712 occurred among males and 9299 among females. The respective death rates per 100,000 population are 70 and 92.3 per cent. From the standpoint of racial distribution, 945 deaths occurred in the white population of the state and 682 in the non-white population. The respective death rates per 100,000 population are 92.3 and 69.5 per cent. The striking difference in recorded cancer death rates in whites and non-whites is more probably due to differences in medical care than to actual differences in deaths from the disease.

The 1,636 deaths from cancer which occurred in Mississippi in 1945 prove again that cancer is primarily a problem of older age groups; only 89 deaths, 5.4 per cent, occurred in persons thirty-four years of age or younger, against 1,547, 94.6 per cent, in persons over that age. These facts make quite clear where the problem of cancer is concentrated and what age groups must receive the most attention in the search for the disease. The index of suspicion on the part of the profession in fact, must increase proportionately with the age of the patients under investigation. (Table 1).

Regional Distribution—In war, reconnaissance of the geographic distribution and strength of the enemy is of paramount importance. Of comparable importance in the battle against cancer is the anatomic distribution of the disease and its relative frequency of occurrence in the various regions and systems of the body. Here again the cancer deaths in Mississippi in 1945 form a fair basis for study (table 2). In a distribution of the 1,636 cancer deaths in the state according to the International List of Causes of Death, it becomes evident that 1,188, more than three-quarters of the total, resulted from cancer in four systems of the body namely, the digestive organs and peritoneum, the uterus, the breast, and the male genitalia. The distribution by anatomic regions in the state of Mississippi which is roughly the same as for the nation as a whole makes clear which systems in the body must be chiefly under suspicion. Obviously, little progress can be made toward reducing total cancer deaths unless there is a reduction in the deaths due to cancer in these four anatomic regions.

THE EDUCATION OF THE PUBLIC

There is no need to debate before physicians the proposition that the prevention or postponement of death from cancer is dependent upon the extent of the lesion when it is diagnosed. But this, in turn, depends upon how early the patient reports to the physician, which depends,in its turn, upon how much the patient knows about cancer. The necessities of the situation demand that part of any cancer control program must be education of the public. An efficient ally organization, the

American Cancer Society, is spearheading this educational drive and deserves the full support of the medical profession. The United States Public Health Service and state boards of health can contribute much in this field. The activities of all of these groups must be coördinated with properly designated committees of state and local medical societies. These committees must furnish counsel and guidance to lay groups. The primary role of the official and unofficial agencies should be to serve as vehicles for transmitting information and supplying information and supplying necessary funds. The source of the educational content must be the medical profession, which must also assist in transmitting it to the public.

THE EDUCATION OF THE PROFESSION

Informed medical authorities have begun to express the fear that public concern about cancer, and public educational efforts concerning it, are in advance of comparable medical interest and activities. There is considerable evidence that this is true. If the situation should remain unaltered, the whole program of control would be endangered.

While the public is being taught to report promptly to the physician because of certain signs and symptoms it is of the greatest importance, for the reputation of the profession as well as for the welfare of patients, that physicians have a high index of suspicion, based on a sound knowledge of the fundamentals of cancer. Far too many patients are dying in Mississippi—as elsewhere—because the physicians who first see them after symptoms have appeared fail to suspect that cancer may be present until the diagnosis is self-evident. When that has occurred, treatment can be no more than palliative and death is the inevitable outcome.

The ultimate diagnosis and treatment of cancer requires specialized training, specialized equipment, and specialized therapeutic procedures not possessed by, or possible for, a large proportion of the physicians in Mississippi. But the detection of cancer is every physician's responsibility, and failure to diagnose the disease early, or to refer the patient suspected of the disease to physicians equipped to diagnose it early, is a common error and is established as at least one cause of the high death rate.

The medical profession must correct this situation. It must get its own house in order. It must cease to be responsible for deaths from cancer. This is best done through the leadership of cancer committees of state associations. It can well be done by this method in Mississippi.

In several states good progress has been made in professional education. An example is the state of Kentucky, in which a large committee of the State Medical Association has carefully planned and is now executing a series of lectures and demonstrations by experienced surgeons and other specialists, so decentralized as to bring them within easy reach of every physician. Night sessions are held, and the course is arranged to provide one night session weekly for several weeks for each locality. Funds are supplied by the Kentucky State Board of Health and the American Cancer Society.

Mississippi has lagged behind many other states in respect to professional education in cancer. Would a plan similar to the Kentucky plan solve the problem? By this, or by some other plan, arrangements should be made promptly to reach a large proportion of the physicians in the state with lecture and demonstration courses given by specialists in various phases of the disease. Long-term and short-term postgraduate courses in the diagnosis and treatment of cancer could be arranged in medical schools and teaching hospitals for both general practitioners and specialists. There is no reason why the interest in this field should not be as great as the interest in penicillin. It is up to the medical profession of the state to analyze its needs and to activate the plans to meet them.

DIAGNOSTIC AND THERAPEUTIC FACILITIES

In Mississippi, as has been pointed out, as well as in other states, the specialized equipment and diagnostic and therapeutic facilities required in the proper management of cancer are not within the reach of a large proportion of the profession. Relatively few radiologists in the state are equipped to use x-ray and radium. Few physicians' offices are equipped for the diagnosis of many types of cancer. Pathologists, whose services are essential in diagnosis, are not immediately available in many parts of the state. For these reasons the diagnosis and treatment of the disease must at present be limited to the few centers in Mississippi where adequate facilities are available.

The Mississippi Division of the American Cancer Society and the Mississippi State Board of Health have been working with the Cancer Committee of the Mississippi State Medical Association on a plan of cancer control for the state. The plan includes, in addition to plans for professional education and education for the public, the provision of facilities for the diagnosis and treatment of the disease in the indigent and semi-indigent groups. One of the recommendations of the Cancer Committee of the Medical Association is that the Mississippi Division of the American Cancer Society and the Mississippi State Board of Health make funds allotted for the diagnosis and treatment of the disease available only to groups approved by the American College of Surgeons as meeting the minimum standards for diagnosis and treatment. The wisdom of this limitation needs no debate.

At the present time three such approved centers have been developed in two areas of the state. Ultimately there should be six or eight, located at strategic points, so that all areas of the state will be within reasonable distance of approved diagnostic and therapeutic facilities. Funds from both official and non-official agencies could well be used in the equipment and staffing of centers of this kind, in which adherence to the minimum standards established by the American College of Surgeons would guarantee to the victims of cancer the best possible diagnostic and therapeutic management.

SUMMARY

The purpose of this discussion has been to outline the cancer problem in Mississippi and to point out its magnitude as indicated by the number of deaths in the state, the deficiencies in lay and professional education, and the lack of diagnostic and therapeutic facilities. The disease is so prevalent that it demands attention. The number of deaths caused by it is the direct responsibility of the physicians practising in the state. What other groups can do to prevent deaths from cancer is only adjunct to what the profession must do. Effort must be intensified in serving indigent victims. Only by these means can the problem of cancer be solved.

TABLE 1

Distribution of Cancer Death by Age Groups

Age Groups	**Deaths**	**Proportion**
35-44 years	185	11.3%
45-54 years	286	17.4%
55-64 years	384	23.5%
65 years and over	691	42.2%

TABLE 2

Distribution of Cancer Deaths by Anatomic Regions

Region	**Deaths**	**Proportion**
Diges. organs, Peritoneum	650	39.7%
Uterus	285	17.4%
Breast	127	7.8%
Male Genitalia	126	7.7%
Respiratory system	97	5.9%
Urinary tract	67	4.0%
Skin	58	3.5%
Buccal cavity	48	2.9%
Brain, other parts of central nervous system	25	1.5%
Other female genitalia	18	8.2%
Unspecified organs	135	8.2%
Total	1,636	99.7%

Mytopon Hydrochloride*

(Methyldihydromorphinone hydrochloride)

IN 1929 WITH the funds provided by the Rockefeller Foundation the National Research Council, through its Committee on Drug Addiction, undertook a coördinated program to study drug addiction and search for a non-addicting analgesic comparable to morphine. The principal participating organizations were the universities of Virginia and Michigan, the United States Public Health Service, the Treasury Department's Bureau of Narcotics, and the Health Department of the State of Massachusetts, which brought together chemical, pharmacological and clinical facilities for the purposes of the study. Metopon is one of the many compounds made and studied in this coördinated effort.

Chemically metopon is a morphine derivative; pharmacologically it is qualitatively like morphine even to the properties of tolerance and addiction liability. Chemically metopon differs from morphine in three particulars; one double bond of the phenanthrene nucleus has been reduced by hydrogenation; the alcoholic hydroxyl has been replaced by oxygen; and a new substituent, a methyl group has been attached to the phenanthrene nucleus. Studies made thus far indicate that pharmacologically metopon differs from morphine quantitatively in all of its important actions—its analgesic effectiveness is at least double and its duration of action is about equal to that of morphine; it is nearly devoid of emetic action; tolerance to it appears to develop more slowly and to disappear more quickly and physical dependence builds up more slowly than with morphine; therapeutic analgesic doses produce little or no respiratory depression and much less mental dullness than does morphine; and it is relatively highly effective by oral administration.

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*Submitted by the Drug Addiction Committee of the National Research Council, 2101 Constitution Ave., Washington, D. C., April, 1947.

In addition to animal experiments these differences have been established by extensive employment of the drug in two types of patients: individuals addicted to morphine, and others (terminal malignancies) needing prolonged pain relief but without previous opiate experience. In morphine addicts, metopon appears only partially to prevent the impending signs of physical and psychical dependence. In terminal malignancy, administered orally, it gives adequate pain relief, with very little mental dulling, without nausea or vomiting and with slow development of tolerance and dependence.

The high analgesic effectiveness of oral doses (with the elimination of the disadvantage to the patient of hypodermic injection), the absence of nausea and vomiting even in patients who vomit with morphine or other derivatives, the absence of mental dullness and the slow development of tolerance and dependence place metopon in a class by itself for the treatment of the chronic suffering of malignancies, and it is for that purpose exclusively that it is being manufactured and marketed.

Metopon will be available **only** in capsule for **oral administration.** The capsules will be put up in bottles of 100 and each capsule will contain 3.0 mgm. of metopon hydrochloride. They can be obtained by physicians only from Sharp and Dohme or Parke, Davis and Company, on a regular official narcotics order form, which must be accompanied by a signed statement supplying information as to the number of patients to be treated and the diagnosis on each. The drug will be distributed for **no other purpose** than oral administration for chronic relief in cancer cases.

The dose of metopon hydrochloride is 6.0 to 9.0 mgm. (2 or 3 capsules), to be **repeated only on recurrence of pain,** avoiding regular by-the-clock administration. As with morphine, it is most desirable to keep the dose at the lowest level compatible with adequate pain relief. Therefore, administration should be started with two capsules per dose, increasing to three only of the analgesic effect is insufficient.

Tolerance to any narcotic drug develops more rapidly with excessive dosage and under regular by-the-clock administration. Also, as a rule, the pain of cancer varies widely in intensity from time to time. Pain, therefore, should be the only guide to time of administration and dosage level. Tolerance to metopon hydrochloride develops slowly. It can be delayed or interrupted entirely by withholding the drug occasionally for twelve hours or for as much of that period as the incidence of pain will permit.

To each physician will be sent a record card for each patient to whom metopon hydrochloride is to be administered. He will be requested to fill out these cards and return them in the addressed return envelope. He must furnish this record of his patient and his use of metopon hydrochloride if he wishes to repeat his order for the drug. The principal object of this detailed report is to check the satisfactoriness of metopon hydrochloride administration in general practice. The physician's coöperation in making it as complete as possible is earnestly solicited.

* * *

The limited use of metopon hydrochloride as described above has been recommended by the Drug Addiction Committee of the National Research Council and the Committee with the coöperation of the American Cancer Society, will supervise the distribution of the drug. The Committee is composed of Wm. Charles White, chairman Washington, D.C.; H. J. Anslinger, commissioner of Narcotics, United States Treasury Department, Washington, D. C.; Lyndon F. Small, National Institute of Health, Washington, D.C., and Nathan B. Eddy, National Institute of Health, Washington, D.C. Queries and comments on metopon may be addresses to Dr. Eddy, who will answer them for the Committee.

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Prepayment Hospital Plan Will Aid the People and Hospitals

OWEN COOPER, Executive Director
Mississippi Farm Bureau Federation

NOW THAT WE are going to build hospitals, these questions arise: How are we going to get the hospitals used, How are we going to get the money to run the hospitals? How are we going to get a high percentage of occupancy? How is the average person in Mississippi going to pay his hospital bill? How can we make it possible for the farmer, the laborer, the middle-low income group to use the hospitals for illness?

Just to build hospitals in a low income state is not enough. Having hospital facilities is not assurance, per se, that they will be used. During the depression there was a three-story hospital in the state with one floor closed because people did not use the hospital. The need for all the room on the closed floor was evident to anyone who knew the health condition of the people of that county. A hospital man who operated a fifty-bed hospital during the depression says he never saw over thirty-five patients in the hospital at one time during his two years of superintendency and saw at one time a low of six patients in the hospital.

Our new hospitals will be built when costs are high. Operating costs are high and will never be as low as they were during the '30's.

Considering these facts the conclusion is inescapable that the success of the hospital program through the years to come depends on securing a high percentage of occupancy at all times by paying patients. How can this best be done?

Generally speaking, we can divide our population into three classes as to hospital use. There is a group at the top of the income ladder, about 15 per cent, who can pay a hospital bill at any time without worry. There is a group at the bottom of the income ladder, about 15 per cent, who cannot pay—they are medical indigents, charity. Now that leaves about 70 per cent of our people whose income is such that a large hospital bill would create a serious problem, requiring several years to repay, or perhaps wiping out a lifetime saving, or requiring a mortgage on the home or the farm. This 70 per cent, however, could budget monthly, quarterly, or annually a sum sufficient to pay a reasonable premium in a hospital insurance plan which would take care of substantially all normal hospital costs. And unless this group finds some way to use the proposed hospitals to be built in Mississippi, the entire hospital construction program will be a failure.

The legislature recognized the need of a prepayment hospital program, and in writing House Bill 430 creating the Mississippi Commission on Hospital Care the legislature provided that: "The commission is authorized to assist in developing, promoting and encouraging a voluntary prepayment plan of hospitalization, or hospitalization insurance."

For a long time there has been considerable interest in getting a Blue Cross hospital insurance program operating in Mississippi. The Blue Cross Plan for hospital insurance operates in every state except Mississippi and Arkansas and now covers approximately twenty-seven million persons in the nation.

The so-called blue Cross program was largely developed by the American Hospital Association. It is a non-profit association, organized by local citizens, and in order to be approved by the American Blue Cross Commission it must meet certain minimum requirements, among these a) to be non-profit, b) to have a board of directors representing doctors, hospital, and the general public, and c) to be operated on a service plan rather than a direct indemnity plan.

An interested group of individuals have been meeting in Mississippi since November to develop a Blue Cross program for Mississippi. These individuals have proceeded to the point where a person with Blue Cross experience has been employed to come into Mississippi to start work July 1 developing and promoting a Blue Cross hospital program for the state.

The Blue Cross program will specialize in a family type group policy with the hope that a substantial number of rural and urban people will avail themselves of prepaid hospital insurance.

It is planned that during the month of September a charter campaign will be held, at which time the program will be presented to the people of Mississippi giving them an opportunity to participate if they so desire. If a sufficient number of people indicate interest in the program, then it will be organized. If there is not enough interest in the program, the project will be abandoned. There is a firm belief, however, on the part of those participating in the organization of the program that there will be sufficient evidence of interest to warrant setting up the proposed insurance plan.

Definite details have not been worked out regarding the policy. However, studies thus far indicate that the proposed policy would pay the entire hospital bills of about seven out of ten persons hospitalized, and would pay an average of about 73 per cent of all hospital bills. The plan would not, however, cover all the hospital bills for all the people.

If organized, the Blue Cross program in Mississippi will be owned by the policy holders and run by them for their mutual benefit and protection. A board of directors of outstanding public spirited citizens would serve to direct the affairs of the company, and the company would be organized under the laws of Mississippi.

The purpose of promoting such an organization in the state is largely motivated by the following reasons:

1) The need for a prepayment plan specializing in family groups for rural and low-income urban people.
2) The need for some type of prepayment hospital insurance which can be promoted on a community basis.
3) The need for prepayment insurance as a means to assure the success of the proposed hospital construction program.
4) The need for a low cost hospital insurance to make it possible for many persons who now depend on charity to pay their own hospital bills.

This proposed program will be operated and directed by the hospitals, the doctors and the general public, and will be run for the benefit of the people. It will be your program, its measure of success will be in proportion to your interest, and its beginning only awaits the day of a sufficient evidence of participation on the part of the people of Mississippi to assure its success.

The responsibilities of the nursing profession in the education of the patient and his family should be emphasized. If the public health nurse has sound fundamental knowledge of tuberculosis, with its social and economic implications, she can be expected to make intelligent use of this knowledge. Catherine Glennon, R.N., Bulletin Ind. St. Board of Health, November, 1946.

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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CHILD HEALTH STUDY

The Mississippi Study of Child Health Services is moving satisfactorily toward the goal of complete recording of medical facilities available for the treatment of Mississippi children. The participation of doctors in this fact-finding survey exemplifies a vital interest among members of the profession in establishing a basis of fact upon which well-founded plans for future child medical care can be grounded.

The helpful coöperation of physicians has produced valuable data and has indicated areas worth more detailed study. The current phase of activity in the survey is directed toward securing some amplification of the care of sick and well children in terms of health supervision. Such services as immunization, health examinations, advice on infant feeding and routine newborn care are of vital importance in evaluating the scope of service rendered to children by physicians in general practice. In addition, some statistical inferences may be drawn from the seasonal character of this particular phase of the Study.

With the approval of the state medical and dental organizations a sampling group of physicians and dentists will be called upon to assist in this expanded phase of the state child health study.

With recording of hospital and community health service complete and with the already excellent response from our doctors and dentists concerning the scope of service patients, the statistical picture of medical service to children in our state begins to take concrete form. The addition of detailed and seasonal information concerning health supervision is another step toward complete recording of available medical facilities.

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SPASTIC PARALYSIS REPORT

(Guest Editorial)

J. T. Davis, M.D.

One only has to read the recently published report to the Mississippi Commission on Hospital Care concerning spastic paralysis among the children of Mississippi to learn of the dire need of some concerted effort toward helping these unfortunate children. This report followed a recent survey of the entire state and reveals astonishing facts and figures concerning these physically handicapped little ones. It is a challenge to the people of Mississippi to do something about these forgotten children.

More than two thousand cases of spastic paralysis are on record in our state, which means that more than two thousand children are suffering from a malady even more dreadful than that well-known scourge, poliomyelitis.

All of you have seen these cases from time to time in the past, noted their physical disability, only to dampen their spirit of hope with a discouraging shake of the head and a pat on the back, sending them back to the shadows of their homes to live the life of a hopeless invalid. This need no longer be true, if we will lend a helping hand to the recently organized Mississippi Association for the Aid of Spastic Children. It does one good to know that we have such capable leaders pioneering this movement in our state as Mr. William E. Mallett, president of the Association, and Dr. Guy R. Post, director of Crippled Children's Service. They have done outstanding work in organizing the school for spastic paralysis in Jackson, Mississippi, and undertaking to treat and train these children. In the short period of two months during which time the school has been in operation it has been definitely demonstrated to the satisfaction of the medical profession and those concerned, that something worthwhile can be done.

It behooves every member of every county medical society to lend a hand in this program. You can help by working with your county or district chairman in this movement. A copy of the report to the Mississippi Commission on Hospital Care may be obtained from your county or district chairman or by writing Mr. William E. Mallett, president, Mississippi Association Aid of Spastic Children, Jackson, Mississippi. Present it for discussion at your next county medical meeting.

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The Study of Child Health Services in our state under the direction of the American Academy of Pediatrics has gone along in fine order. Mississippi has made a fine record under the able guidance of Miss Barre Prichett and with the help of the pediatricians of the state. The entire medical profession and the Mississippi Dental Association have been very coöperative. Much credit is due Dr. Harvey F. Garrison, Sr., for the success of this survey. He has done much to bring pediatrics to the front in our state. It is very encouraging to see this specialty make such progress in Mississippi. Let every one do his part to round out the survey in good order.

News and Comment

SCHOLARSHIPS

The state Medical Education Board approved ten loans for medical education scholarship to become effective during the summer and fall of 1947, as follows:

BAGGETT, BILLY, Oxford, Mississippi; BANE, JOHN R., Jr., 805 Belhaven Street, Jackson, Mississippi; CATES, ROBERT THERREL, Longview, Mississippi; FRYE, HARRY C., Jr., 410 Decelle Street, Jackson, Mississippi; GORE, ALBERT L., 620 North Street, Jackson, Mississippi; GRIFFITH, REUBEN WILLIAM, Jr., 810 North President Street, Jackson, Mississippi; KIRK, DURWOOD L., Doddsville, Mississippi; McBRYDE, A. M., Sumrall, Mississippi; PURYEAR, LAMAR, Jr., Raymond, Mississippi; WESLEY, VELMA L., negro, Tougaloo, Mississippi.

Applications for loans to become effective in February, 1948, will be received on and after November 1, 1947, at the Jackson offices of the Board.

Deadline for receipt of applications for summer and fall loans is August 15, with August 20 set as deadline for receipt of all credentials for applications then pending.

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NEW DOCTORS

The following physicians were granted licenses to practice medicine in Mississippi by the Mississippi State Board of Health in regular session on June 25, 1947:

By written examination

Dr. Hugh M. Batson, Jr., Hattiesburg; Dr. John Clyde Beard, Jr., Heathman; Dr. Raymond L. Benson, Lucedale; Dr. Frank M. Blackwell, Newton; Dr. Cornelius D. Bouchillon, III, Houston; Dr. James Murray Brock, McComb;; Dr. William A. Bryant, (Tennessee); Dr. Carroll Lee Busby, Brookhaven.

Dr. James E. Calloway, Jr., Louisville; Dr. James Henson Clark, DeKalb; Dr. Webster Cleveland, Jr., Belmont; Dr. Hugh Curry Crowell, Houlka.

Dr. William J. Daniel, Jr., Fulton; Dr. Henry B. Dearman, New Augusta; Dr. Thaddeus H. Doggett, Kossuth; Dr. William Watson Dreher, Gloster.

Dr. Lester W. Eavenson, Cleveland; Dr. Woodrow George Ellis, Vicksburg; Dr. Howard W. Ellzey, Kokomo; Dr. Theodore Everett, (Oklahoma); Dr. John Sharp Ewing, Jr., Vicksburg.

Dr. John Mitchell Ford, Baldwyn; Dr. James Ray Foster, Shelby; Dr. Frazier Earl Fyke, Jr., Jackson.

Dr. Billy Norris Golden, Hattiesburg; Dr. Robert Shelton Green, Laurel.

Dr. James Stone Harrison, Sarepta; Dr. Maurice F. Herring, Jr., Raymond; Dr. Charles Norris Hickman, Louisville; Dr. Chesley H. Hill, Amory; Dr. Walter R. Holladay, Meridian; Dr. Robert James Hooper, (Tennessee).

Dr. Van Rieves Jackson, Jr., Decatur; Dr. Jessie Elise Jones, Coldwater; Dr. Jack Victor King, Jackson; Dr. John C. Longest, Gulfport.

Dr. Charles Eugene Mangin, Canton; Dr. Thomas J. Marland, Jackson; Dr. Tom Herron Mitchell, Starkville; Dr. William Edwin Moak, Philadelphia; Dr. Joseph Henry Morris, Vicksburg.

Dr. Max West Pegram, Tupelo; Dr. Edward Pennington, Decatur; Dr. Anthony J. Santangelo, (Louisiana); Dr. Samuel Avery Scott, Jackson; Dr. Saul Siegel, Greenville; Dr. Archie Jackson Stacy, Jr., Tupelo.

Dr. Thomas W. Talkington, Jr., Hattiesburg; Dr. George Jesse Taylor, III, Morton; Dr. Allen Gene Thomas, Byhalia; Dr. William Lewis Thornton, Meridian; Dr. Edwin M. Topp, Jr., Tupelo.

Dr. Herschel J. Wells, (Michigan); Dr. George M. Wilson, Monticello; Dr. Noel C. Womack, Jr., Jackson; Dr. William M. Wood, Carthage; Dr. Earle I. Wrenn, Jr., Doddsville; Dr. Lance Sanders Wright, Amory.

Dr. George Zubowicz, (Illinois).

By Reciprocity

Dr. John G. Atwood, Meridian; Dr. Thomas G. Barnes, II, Inverness; Dr. Exter F. Bell, Jr., Benoit; Dr. David E. Bourgeois, Bay St. Louis; Dr. Wilbur S. Brooks, Vicksburg; Dr. Edwin Byer, Stonewall.

Dr. James W. Caden, Jackson; Dr. Eugene Davidson, Jackson; Dr. Wightman R. Duke, Columbus; Dr. Ernest W. Eberling, Starkville; Dr. Mary Critz Fletcher, Starkville; Dr. Richard E. L. Fowler, Marion.

Dr. Hart Goodloe, Jackson; Dr. Don Morse Griswold, Jackson; Dr. Ira Lee Hewitt, Summit; Dr. Frank Foster Kennedy, Aberdeen; Dr. Sam Levi, Gulfport; Dr. Peere Caroe Lund, Jackson.

Dr. James A. McCullar, (Alabama); Dr. Roy Claude McGlamery, Newton; Dr. William A. Meyers, D'Lo; Dr. Abe Mickal, McComb; Dr. Roy Wilson Money, Lumberton; Dr. D. Cameron Montgomery, Greenville; Dr. Forrest L. Monzingo, Biloxi; Dr. Joseph C. Mulhern, Jr., Sanatorium; Dr. Dudley H. Mutzinger, Natchez.

Dr. Jonah Nichols, Gulfport; Dr. Woodrow W. Payne, Cleveland; Dr. Wesley Gordon Plinke, Hickory; Dr. George E. Twente, Jackson; Dr. Wilbur Glen Wells, Magee.

PLEASE!

I have wanted to live a life of service to my fellowman and am now engaged in trying to do a final service to the Mississippi State Medical Association. I am very anxious to collect pictures of every member together with brief data concerning each of you, mainly date and place of birth, date and place of graduation or licensure. This collection will belong to the association and will be kept and displayed by the state department of archives and history in Jackson. I am cheerfully doing the work and defraying the expense. It does seem that I am asking very little of each of you. Please coöperate with me. I must have your help if I am to succeed. PROMPT action is imperative. I have grown old and am fast growing older; my health is precarious. If this self-imposed task is to be finished it must be finished soon. I plead with every one of you who has not already sent data in, to do so AT ONCE. I appreciate the coöperation I have had but I feel that I am entitled to the help of every one of you and should have it.

Yours with fraternal affection,

G. S. Bryan.

JOINS SMA STAFF

Mr. H. L. Williams of Birmingham has joined the headquarters staff of the Southern Medical Association as assistant to the secretary-manager, Mr. C. P. Loranz.

NEW COUNCILORS-ELECT

The following councilors-elect have been named for the Southern Medical Association: **Alabama**, Dr. Wilbur M. Salter, Anniston, to succeed Dr. Harvey B. Searcy, Tuscaloosa; **Kentucky**, Dr. Clifford N. Heisel, Covington, to succeed Dr. J. B. Lukins, Louisville; **Tennessee**, Dr. R. L. Sanders, Memphis, to succeed Dr. Kate Savage Zerfos, Nashville; **West Virginia**, Dr. Andrew E. Amick, Lewisburg, to succeed Dr. Ray M. Bobbitt, Huntington.

Sixty students are attending school this year by means of the state scholarship loans, thirty-four are veterans, seventeen are married and ten have children. Thirty-nine of our doctor population died last year. Seventy-four per cent of our doctors live in towns of five thousand or under. The average age of the white students asking for funds is twenty-four years and of colored twenty-five years.

ANNOUNCEMENT

Drs. Gamble Brothers and Archer announce to the medical profession that Dr. Virginia Small has resumed her position with this clinic in charge of pediatrics.

They also announce that Dr. John C. Suares, recently of New Orleans, La., will be associated with Dr. Lyne Gamble in the eye, ear, nose and throat department.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology, April, 1947; V. 55, No. 4.

REACTIONS TO PENICILLIN. Frank E. Cormia, Leif Y. Jacobson and E. L. Smith, Bulletin, U. S. Army M. Dept. (Dec.) 1945.

The study deals with the serious and unusual reaction obtained in some 2,000 soldiers receiving prolonged courses of penicillin. Serious reactions have been reported in about 0.5 per cent of the patients reported. Reactions may occur shortly after initial exposure to penicillin, as a result of an existing hypersensitiveness, or at later intervals, because of developing sensitization. Both early and late reactions may be serious in nature and require discontinuation of therapy. From clinical observations, it appears that the primary shock tissue in most reactions to penicillin is the vascular bed.

Intradermal testing with penicillin has been of limited value as an aid in diagnosis and a guide for further treatment. Increased reactivity to penicillin may occur on the basis of a previous acute fungous disease.

*****

SKIN SENSITIVITY DUE TO ATABRINE. Richard Whitehall, Bulletin U. S. Army M. Dept. 4: 724 (December) 1945.

The author reported an eczematous dermatitis involving the eyelids and the areas behind the eyelids and the areas behind the right ear due to quinacrine hydrochloride (atabrine). A positive reaction to a patch test with quinacrine hydrochloride was obtained.

DERMATITIS FROM ATABRINE. L. M. Nelson, Bulletin U. S. Army M. Dept. 4:725 (December) 1945.

The author reported a case of pruritic dermatitis of the wrist which finally spread to involve the whole body and a second case of a generalized dermatitis which eventually developed into a generalized exfoliation. Positive reactions obtained by patch testing with powdered quinacrine hydrochloride (atabrine) were interpreted to be a manifestation of hypersensitivity rather than of a primary irritant, since eight patients with other dermatoses tested in the same manner did not react similarly.

Strakosch, Denver

*****

Archives of Dermatology and syphilology, May, 1947; V. 55, No. 5.

THE INVASIVE CHARACTER OF CANCER GROWTH. Dale Rex Conan, Am. J. M. Sc. 211: 257 (March) 1946.

Conan discusses invasiveness—that feature of malignant tumors which allows them to disrupt the surrounding tissue, dislocating the normal cells and often destroying them. He points out that it is not the pressure of a capsule which keeps benign tumors localized; malignant tumors do not differ from benign ones by peripheral versus central growth, increased pressure within the tumor or the production of destructive ferments. The most evident difference appears to be the relative lack of cohesiveness of cancer cells, demonstrated by a technic which measures the force required to pull apart a pair of cells. Malignant cells, whether from the lip or cervix, consistently showed low values of cohesiveness as compared with normal and benign tumor cells.

The author theorizes on the cause of cohesiveness of cells, regarding it as dependent on the state of the cement substance that is known to exist between cells, which serves to bind them together. Perhaps the explanation lies in local deficiency of calcium, a hypothesis which finds support in the chemical analysis of cancer tissue. Or the defect may relate with abnormality of the "spreading factors" which enhance the spread or diffusion of small particles or solutions through living tissues. Experiments of others suggest that lack of cohesiveness of cancer cells may depend on the excessive presence of a potent spreading factor, an enzyme called hyalauronidase, which can be extracted from testicular tissue.

Lynch, St. Paul

PEDIATRICS

TUBERCULOSIS MENINGITIS TREATED WITH STREPTOMYCIN. Louis L. Krafchik, St. Peter's General Hospital, New Brunswick, N. J. Journal American Medical Association, 132:375-76, October 19, 1946.

"A fifteen-month-old infant was hospitalized because of irritability, fever, restlessness, nuchal rigidity, and hyperactive knee jerks. There was a positive contact history with a grandmother who had been treated for pleurisy at a tuberculosis hospital. Spinal fluid examination revealed normal pressure, ground glass appearance, 440 cells per cubic millimeter, of which 84 per cent were lymphocytes, sugar 15 mg. and chloride 46- mg. per 100 cc. A pellicle formed on standing, and a direct smear revealed acid-fast bacilli. A roentgen-ray of the chest showed hilar gland enlargement. The tuberculin patch test was strongly positive.

A diagnosis of tuberculosis meningitis was made and streptomycin therapy begun. The intramuscular dose was calculated on the basis of 20,000 units per pound of body weight per twenty-four hours. Twenty-five thousand units were also given intrathecally, twice a day. After four days, the intrathecal dose was increased to 50,000 units twice a day, or a total of 600,000 units a day by the combined routes. This was maintained for seventeen days, after which the intramuscular dosage was decreased to 50,000 units every three hours. This was continued for another seventeen days; it was then gradually reduced, and stopped entirely fifty-seven days after treatment began. The patient received a total of 24,000,000 units intramuscularly, and 2,800,000 units intrathecally (sixty-five spinal taps).

The infant had a low fever for over seven weeks. Nuchal rigidity persisted for five weeks and then gradually disappeared. A guinea pig was inoculated with the patient's spinal fluid only after streptomycin therapy had been started and, consequently, there were no signs of tuberculosis when the animal was killed.

When last seen, five months after the onset of the illness, the child was clinically well. The temperature had been normal for seven weeks, and he was active and mentally normal."

COMMENT: This is indeed a very interesting article, since it is well-known that the mortality rate of tuberculosis meningitis has been for many years about 100 per cent. We have not had the opportunity of using streptomycin in the treatment of tuberculosis meningitis, but as we are confronted with this disease again (which we hope we will never be), we will certainly avail ourselves of the opportunity to give streptomycin.

*****

PENICILLIN IN ACUTE NEPHRITIS IN CHILDREN. Susanta Sen, Irwin Hospital, New Delhi, India, American Journal of Medical Science, 211: 289-92, March 1946.

"Twelve children with acute nephritis, the youngest one year, the oldest eight years of age, were treated with penicillin. The total dosage varied between 192,000 and 640,000 units. The number of consecutive days of treatment varied from three to eight. One patient died while the treatment was in progress. Almost all cases were in critical condition when the penicillin was started. No toxic phenomena or complications developed during treatment.

The author postulates that if the primary focus can be eliminated the kidneys have a better chance of recovery and of remaining free from repeated attacks and consequent progressive degeneration.

Penicillin has the advantage over sulfonamide therapy in its absence of renal toxicity. Its use is not contra-indicated in the presence of severe anemia, marked leukopenia or even in agranulocytosis."

COMMENT: There is no doubt but what penicillin is quite advantageous in the treatment of acute nephritis in children. Other remedies often fail when penicillin will do the work.

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Union, Mississippi

State Board of Health

Felix J. Underwood, M. D.

MATERNAL AND CHILD HEALTH ACTIVITIES

Virginia Howard, M.D., Director

The division of maternal and Child Health during the six months, December 1946-June, 1947 was able to expand the services available to the mothers and infants in Mississippi. During the year 1946 some 63,000 infants were born in the state, the largest number on record for any previous year. The number of infants and preschool children admitted to our medical and nursing services the past six months was as follows:

Infants admitted to medical services	3,355
Infants admitted to nursing services	4,487
Preschool children admitted to medical services	4,483
Preschool children admitted to nursing services	6,563

New studies on infant mortality and maternal mortality in Mississippi have been made and the results of these studies will be used as a basis for part of the program to promote the health of mothers and infants.

The division of Maternal and Child Health has given considerable attention to premature infant care. Twelve nurses have been given scholarships for postgraduate training in leading hospitals of the country. Sixty-four modern incubators have been placed in county health departments for loan to hospitals for the care of premature infants. Through their use and through the services of the nurses who have returned from postgraduate training, better care of the premature infant will be developed. Two hospitals in the state have been given assistance in planning the construction of nurseries for premature infants, a worthy undertaking in protecting the life and health of these infants.

Antepartum and postpartum services

During the past six months the attendance at antepartum and postpartum maternal and nursing conferences for Mississippi mothers was as follows:

Cases admitted to antepartum medical services	4,544
Cases admitted to antepartum nursing services	5,819
Cases admitted to postpartum medical services	1,664
Cases admitted to postpartum nursing services	3,665

A series of posters on prenatal diet were completed and distributed to county health departments, Red Cross chapters, home demonstration agents, and others.

Through the coöperation of the University of Tennessee the State Board of Health had the good fortune to obtain the services of Dr. H. C. Franklin as obstetric consultant. Lately Dr. Franklin has been engaged in a study of the prevention of deaths from toxemia of pregnancy in thirty counties in north Mississippi. His consultation services are available to county health officers, private physicians, and hospitals. These services are being welcomed by both physicians and health departments and it is hoped that his work will make possible a further decline in maternal deaths.

One interesting study undertaken by the Division of Maternal and Child Health was for the purpose of determining the number of instances of psychosis complicating the pregnancy of women admitted to the State Hospital during pregnancy or during the postpartum period. It was disclosed that some 4 per cent of all admissions to Mississippi's mental hospitals are due to psychosis complicated by pregnancy. The actual number of admissions was 38, which indicates the importance of this complication in the maternity period. Early remedial service for mental disorders during pregnancy is an important part of good maternity care.

Plasma distributed by the Red Cross to the county health departments to be made available for the use of physicians without charge was used in 541 instances in maternity cases in Mississippi. There was a drop of from 44 to 33 in the maternal deaths due to hemorrage during 1946, which suggests that the use of plasma contributed to this decline in the state.

The Division aided in the distribution of needed war surplus material to county health departments. White enamel storage cabinets, examining tables, bedside tables, examining lights, field autoclaves, sterilizers, operating gowns, electric tongue depressors, foot lockers, etc. were purchased from the War Assets Administration and distributed upon request to 71 county health departments, which welcomed the addition of this much needed and inexpensive equipment to their clinics.

During the past five months, 35 young medical graduates who were available for a period of from three to five months between their graduation and the beginning of their internship, have been employed as externe clinicians in the county health departments. These young physicians have been assigned to county health departments to work under the direction of a trained health officer. Their contribution to the maternal and child health program has proved a worth while one and it is planned to continue this important training program during coming months. Beginning June 15, orientation work will be started for a summer public health internship program for medical students who have completed their junior year. After assignment to county health departments, they will assist health officers in examinations, immunizations, in venereal disease clinics, tuberculosis clinics, maternal and child health clinics, and other activities.

It is felt that broader training in the field of obstetrics and in pediatrics is essential to the welfare of maternal and child health programs. To this end, 27 scholarships for postgraduate training in pediatric and obstetric nursing have been granted to Mississippi nurses in leading schools of the country. When they have returned to hospitals in Mississippi, improved services to mothers and infants will unquestionably be in evidence.

Eleven scholarships for postgraduate training in obstetrics have been awarded to Mississippi physicians during the past six months, and in addition there were 22 scholarships awarded for postgraduate training in pediatrics. Three of the scholarships were made available to colored physicians for a two-week course in pediatrics at Meharry Medical College.

The keynote to good health is considered good nutrition. Through the addition of three trained nutritionists to the State Board of Health staff, nutrition services are now reaching greater numbers than heretofore. There are consultant services to public health officers and nurses and individual conferences at maternal and child health and preschool clinics. Very good nutrition education materials have been prepared for use with these groups. Advice on food preparation and food demonstrations will be given at clinics for the expectant mothers and mothers of preschool children. Several scholarships have been made available for the training of nutritionists. The nutrition program is making good progress and should prove very beneficial to the public health status of Mississippians.

During the past few months the Division of Maternal and Child Health has carried on a survey of breast feeding among the 5,516 infants delivered under the Mississippi Emergency Maternal and Infant Care Program during the year 1944. Information gained from this survey will be tabulated with the aim of encouraging wider breast feeding among mothers in the interest of better health for their infants.

The Mississippi Emergency Maternal and Infant Care Program is now drawing to a close. During 1946 only 2,956 deliveries were authorized at the request of private physicians. Mothers delivered under this program have shown a distinctly lower death rate than for the state at large.

A survey of congenital syphilis was made with the coöperation of the Division of Preventable Disease Control. Infants were examined over the entire state and representative studies reveal that following active syphilitic treatment of the mother, only about 2 per cent of infants of syphilitic mothers now show evidence of infection. To insure protection of infants against this disease, syphilis treatment is being made available to expectant mothers as a routine measure.

The progress made in maternal and child health protection in Mississippi in recent years is reflected in the lower morbidity and mortality rates. At a time when the child population is increasing, it behooves physicians and public health workers alike to give fullest attention to health needs of these potential citizens, putting to work the best principles of modern preventive medicine.

NUTRITION SERVICES

Alice Glenn Keaton, Nutrition Consultant

Early in the year the nutrition service of the State Board of Health was broadened. Under the supervision of a senior nutrition consultant and with assistance of two trained nutritionists, a generalized type of service is being rendered on a local basis, county to county, in the northern half of the state, as well as on a state level.

This nutrition service is being extended to county health units, schools, hospitals, and to interested community groups. It includes advice on food problems, the production of nutrition education materials, and the holding of food demonstrations at instructional centers.

The technical supervision of the production of nutrition materials, the development of policies and procedures needed in promoting the nutrition services and the supervision of the services rendered are under the direction of a senior nutrition consultant. As soon as it is possible to add other nutritionists to the staff. the services will be extended to all counties in the state.

A report of activities for April reflects certain phases of the nutrition services available, as follows:

Leflore County: A visit was made to the Greenwood-Leflore Hospital at the request of the superintendent to assist the dietitian with plans for improved food service.

Warren County: Nutrition services rendered in Warren County consisted of a talk to the Parent-Teacher Association of Bomar Avenue Schools, plans for the Parent-Teacher Association meeting of Jett School, a talk to the Negro County Council, and assisting with plans for a summer workshop for colored teachers. Consultant services were given the health education trainees in planning nutrition classes for teen-age children in the Negro schools.

Madison County: Two individual conferences were held with clinic patients, a total attendance of 100. At the request of the Home Demonstration Agent for the services of the nutritionist, a schedule was made for nutrition lessons to be conducted at the meeting of the demonstration clubs during May and June. Five home visits were made with the nurse to three tuberculosis patients and to two newborn infants. Assistance on diet was given to the mothers of these patients.

Lincoln County: The nutritionist attended one clinic and conducted individual conferences with 34 patients. A group conference was conducted with eight midwives and two nurses.

Yazoo County: One preschool clinic was attended by the nutritionist. Individual conferences were held with 46 parents. One clinic for 60 expectant mothers was attended and individual conferences were conducted.

Claiborne County: The nutritionist led a discussion on vitamins at the county home demonstration club.

Lafayette County: The nutrition consultant and the nutritionist, Miss Chloe Ann Yates, conducted a three-day nutrition survey at the elementary school in Oxford in coöperation with the Lafayette County Health Department and the University of Mississippi. Records were obtained from fifty-seven children, nine to eleven years of age. Six senior home economics students and Dr. Blanche Tansil, head of the Home Economics Department, assisted in obtaining dietary records. The local public health nurse assisted by taking temperatures and blood pressure and weighing and measuring the children. Attention was given to both over and underweight. While no hemoglobin tests were made, some pallor or sallowness was noted in ten of the children. The diets showed a deficiency of 70 per cent in citrus and other fruits, green, yellow, and other vegetables. Fifty per cent of the children drank less than two cups of milk per day.

Alcorn County: Child health clinics were attended by the nutritionist twice weekly during April at the health department and at Union School, with a total attendance of 200 children. At these clinics the nutritionist discussed with the parents the findings of the medical examinations, and made dietary recommendations in accord with the findings. The principal deficiency observed was underweight. Poor skeletal development was noted. Discussions showed the diets of these children were especially low in calcium and vitamin D.

Dietary assistance was given on referrals made by the health officer for: 1. Convalescent diet (extreme emaciation); 2. Milk allergy; 3. Severe nutritional anemia (3 cases); 4. Severe rickets; 5. High caloric diets (10 cases).

The results of the nutrition surveys now being conducted, together with similar studies in other areas, are to be used as the basis for teaching in the summer teacher workshops, lunchroom managers' workshops, schools, etc.

Other counties in which there was a beginning of nutrition services during April included Prentiss, Lowndes and Lee counties.

A special publication, "Your Patient's Food," is being prepared periodically by the nutritionist for use by hospital dietitians and may be had upon request.

Woman's Auxiliary

OFFICERS

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President-Elect	Mrs. J. K. Avent Grenada
First Vice-President	Mrs. Stanley Hill Corinth
Second Vice-President	Mrs. A. B. Harvey Tylertown
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AUXILIARY HAS PICNIC SUPPER

The Lowndes County Medical Auxiliary, reorganized this spring after a during-the-war period of inactivity, entertained doctors of the county recently at a picnic in the garden of the suburban home of Dr. and Mrs. D. E. Staton.

The picturesque spot was lighted by Japanese lanterns swinging amid Spanish moss from the massive oaks. Pedestals at the edges of the bordering flower beds were entwined with ivy, at their tops, magnolia blossoms wired upright to the pedestal bases making shields for the candles burning in hurricane lamps.

From the serving table near the barbecue pit, a picnic supper of fried chicken, corn on the cob, slaw, ice cream and cake was served. Guests were seated at a large table for which a sunburst arrangement of glads formed the center-piece, and at smaller wrought iron tables with glass tops through which showed like arrangements of the same flowers. Hurricane lamps were on all tables. On the large table, cherries had been wired to sprays of mint to form a larger spray topping the punch bowl containing crushed ice. Another punch bowl was rimmed at its base with gardenias.

The committee responsible for arrangements was Mrs. Staton, Mrs. T. F. Wolford and Mrs. D. D. Baugh.

Those present included Dr. and Mrs. Baugh, Dr. and Mrs. A. E. Brown, Dr. and Mrs. J. T. Doster, Dr. and Mrs. J. R. Lavender, Dr. and Mrs. J. R. Lewis, Dr. and Mrs. H. H. McClanahan, Dr. and Mrs. T. C. Naugle, Dr. and Mrs. S. B. Platt, Dr. and Mrs. J. H. White, Dr. and Mrs. E. Q. Withers, Dr. and Mrs. Wolford, Mrs. J. E. Davis, Mrs. W. R. Duke, Mr. and Mrs. J. Will Davis of Big Springs, Texas, brother and sister-in-law of Mrs. Wolford, Dr. and Mrs. Staton and Dr. Hanks.

Members of the auxiliary unable to attend were Mrs. S. L. Hollingsworth, Mrs. Ped L. Fite and Mrs. T. E. Frazier of Crawford.

The auxiliary plans a second social for the doctors October 17.

NORTHEAST MISSISSIPPI AUXILIARY

Members of the Northeast Mississippi Auxiliary had a delightful and profitable meeting June 12 at the home of Mrs. Carl Feemster in Tupelo. Wives of Tupelo physicians joined in extending their usual charming hospitality.

Assembled informally on the hostess' lawn 'neath beautiful shade trees, more than thirty doctors' wives sat for an informative program on our responsibility for the public health. Miss Cassie B. Smith and Miss Gladys Eyrich, both of the State Board of Health, presented interesting phases of health enlightenment, how doctors' wives can promote community interest and support, particularly in child and maternal health. Engaging in manner and devoted to their work, both brought highly worth-while talks.

Mrs. V. B. Philpot and Mrs. Stanley Hill reported enthusiastically of the American Medical Association Auxiliary meetings in Atlantic City, N. J., held in June.

Mrs. W. L. Orr, in the absence of the president, Mrs. Thomas Gore, presided for the afternoon.

A collation of open-face sandwiches, little cakes, and cokes regaled the group at the close of the meeting.

> Think in the morning. Act in the noon. Eat in the evening. Sleep in the night.
>
> —William Blake

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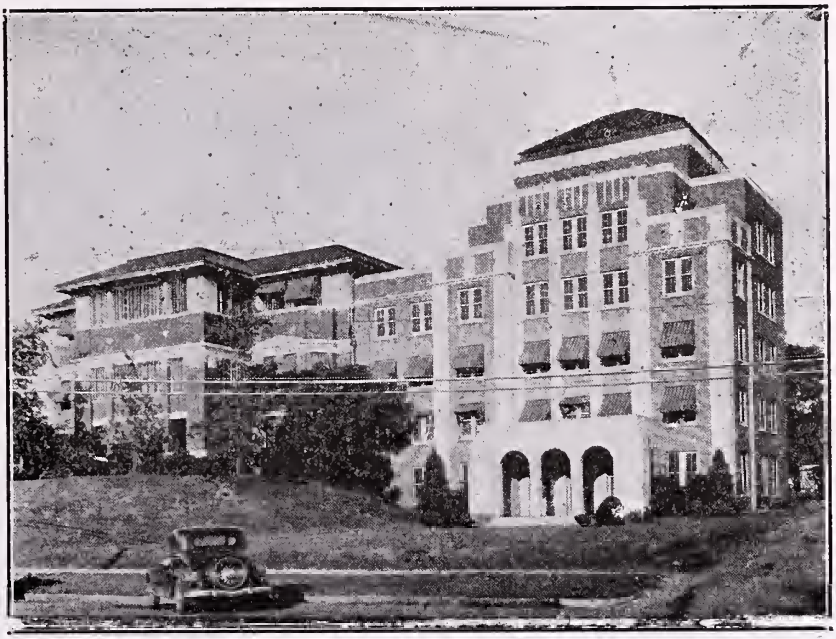

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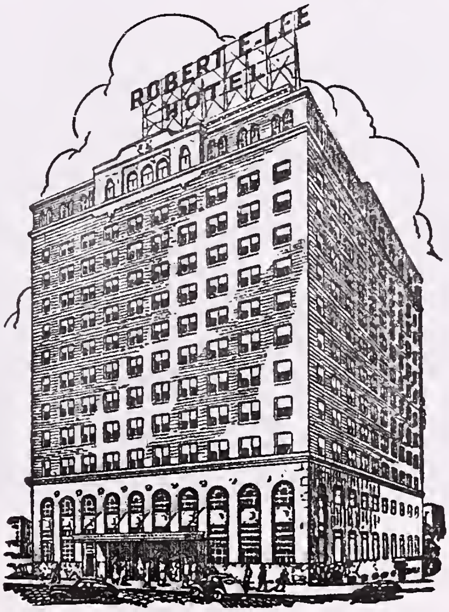

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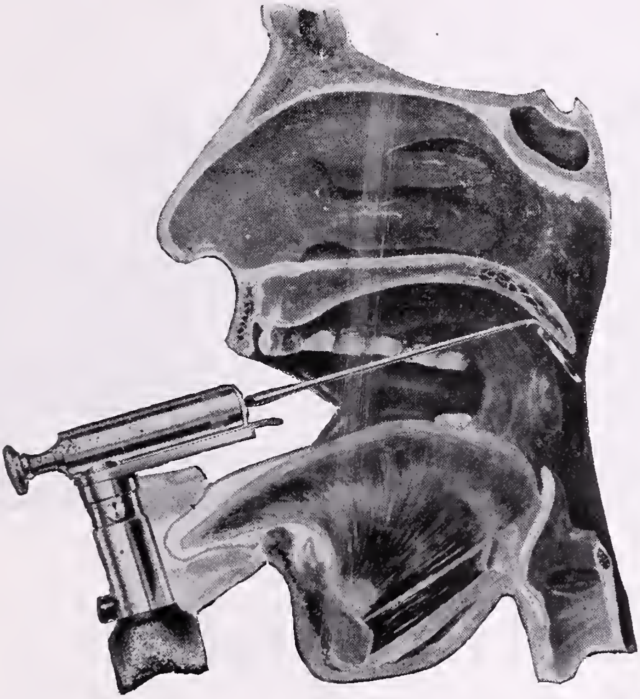

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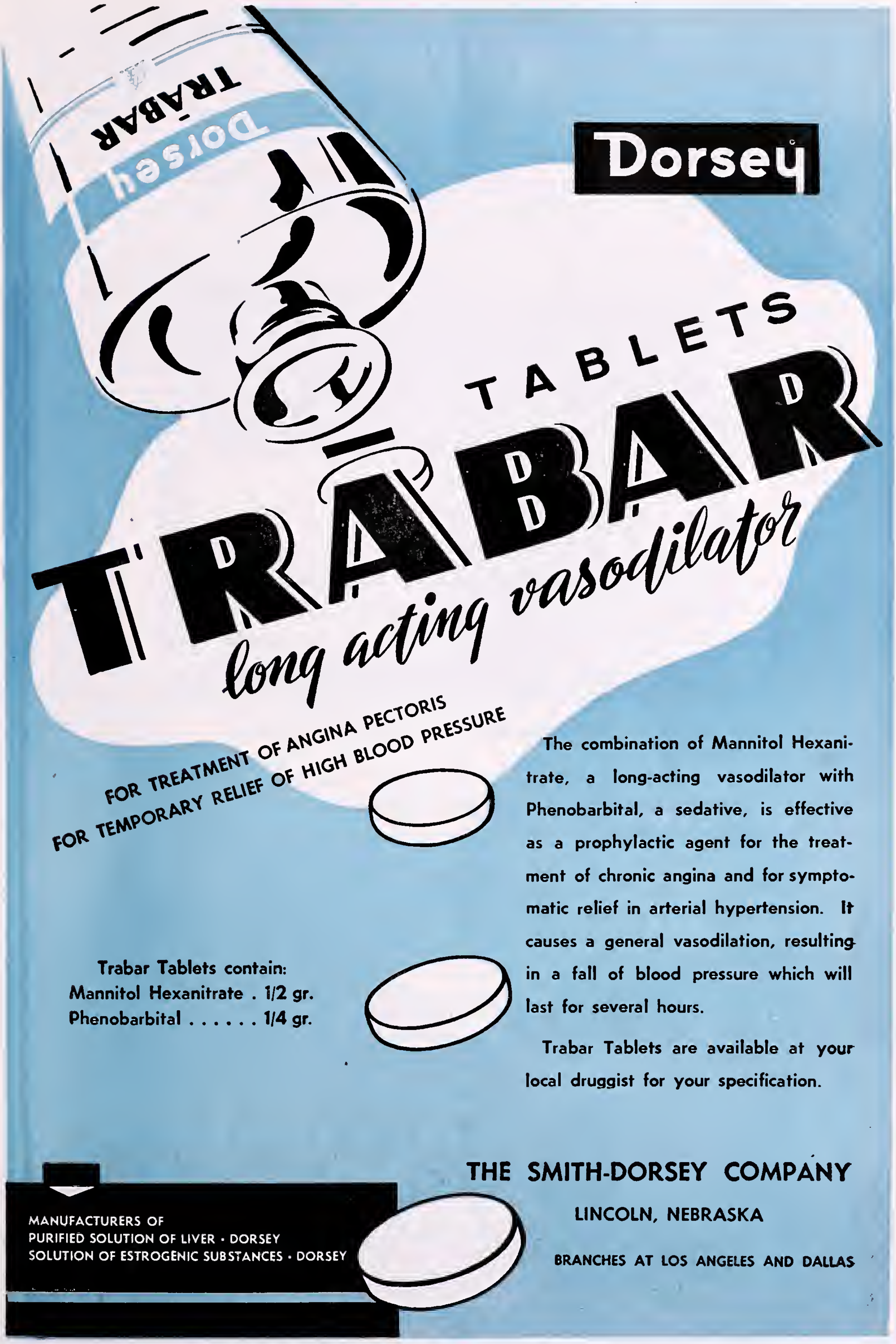

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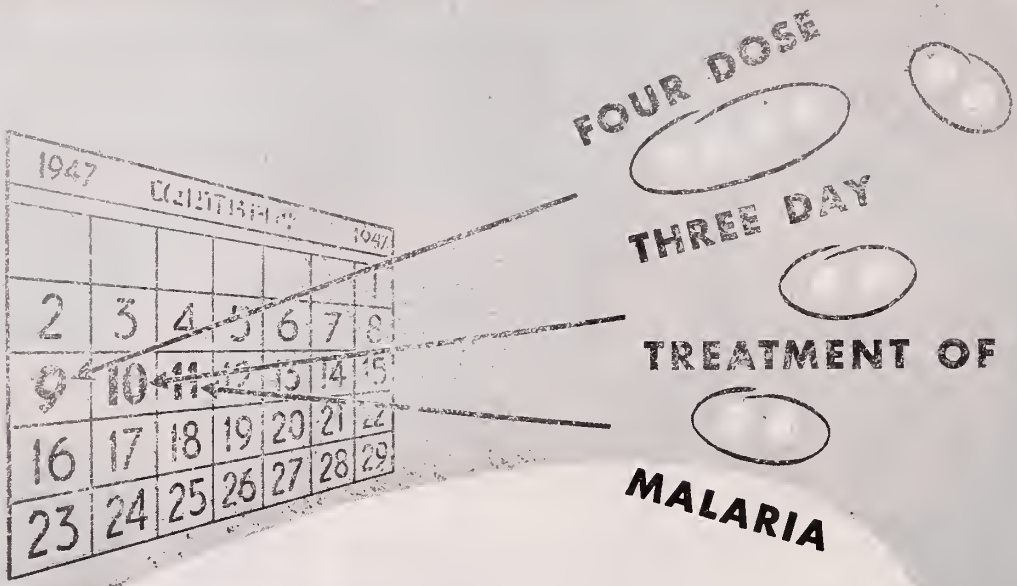

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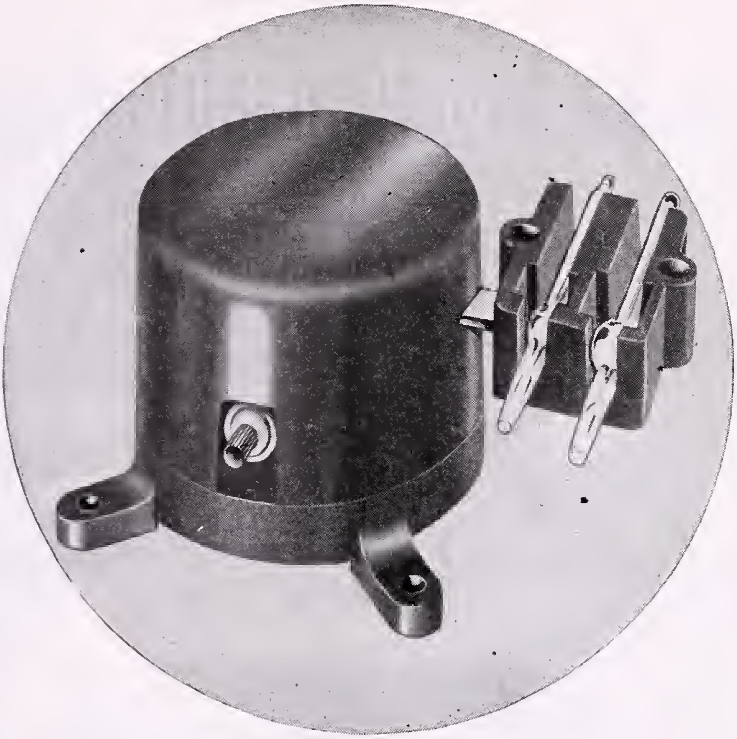

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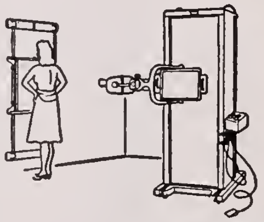

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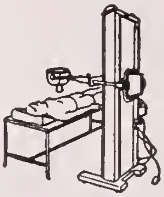

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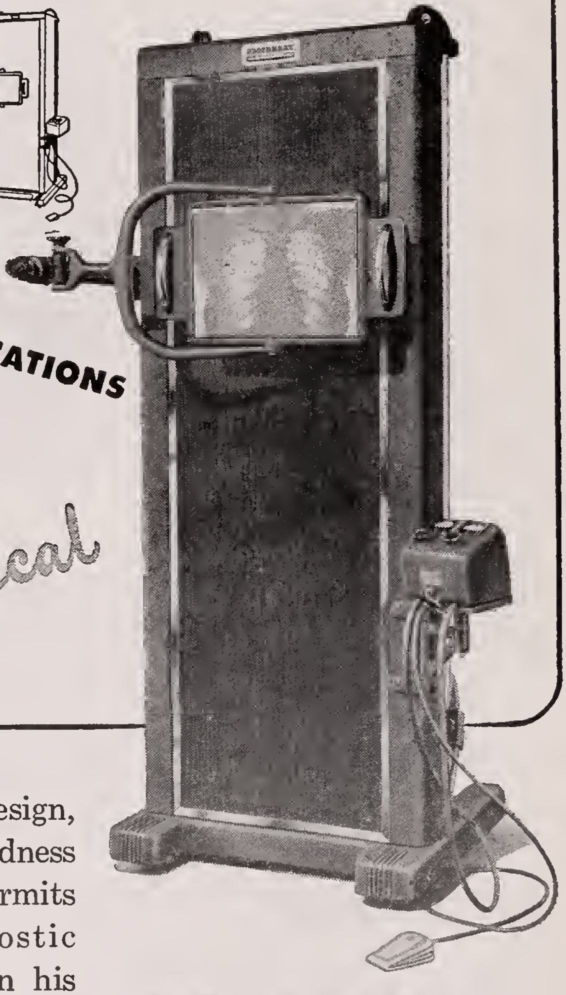

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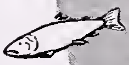

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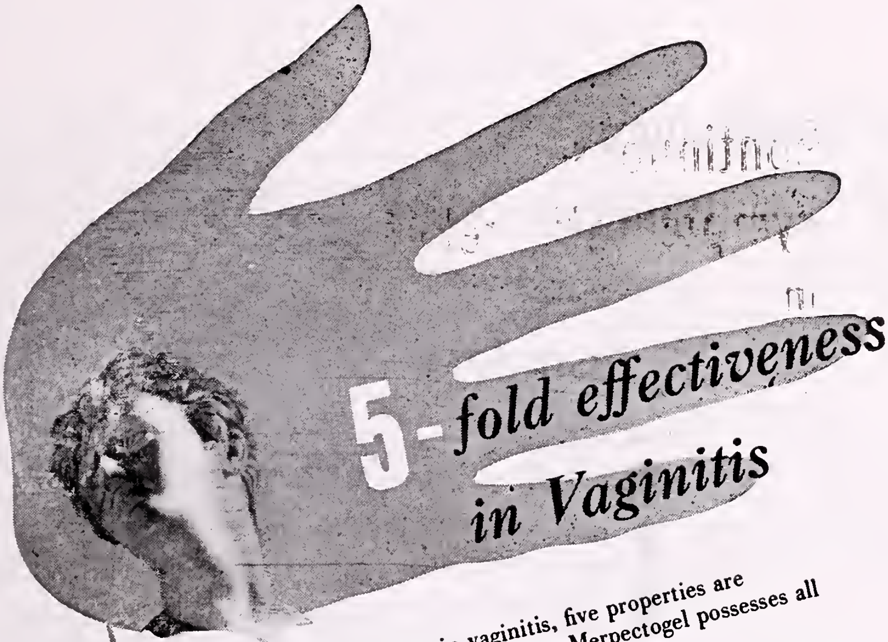

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*Bickers, W., Va. Med. Month., 70:135-140, 1943

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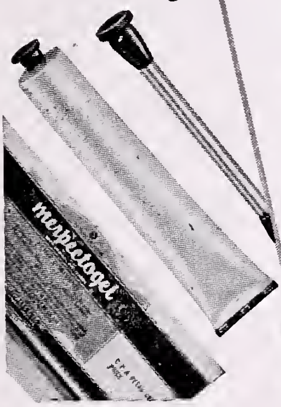

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The Treatment of Hypertension*

WARREN H. COLE, M.D.
Chicago, Illinois

There has been a marked change in the treatment of toxic goiter since the introduction of thiouracil and allied compounds by Astwood and associates[1] in 1943. When these compounds were introduced it appeared that surgical treatment of toxic goiter might be completely eliminated. Although many of the disadvantages of thiouracil embodied in the toxicity of the drug have been eliminated by the introduction of propylthiouracil, it is now apparent that the drugs available at the present time will not eliminate thyroidectomy in toxic goiter. However, some clinicians have adopted the principle of treating all cases of thyrotoxicity medically.

Diagnosis of Hyperthyroidism

I do not intend to discuss the details of the clinical manifestations of hyperthyroidism in this presentation but do wish to comment on a few of the important factors in diagnosis. Although nervousness is the most common symptom of hyperthyroidism, it is likewise a common symptom in innumerable other diseases. Weakness, fatigue, restlessness, sleeplessness and weight loss are likewise common manifestations which are encountered frequently in other diseases.

Intolerance to heat and increased tolerance to cold is a peculiarity of the hyperthyroid patient. He likewise is anxious to be moving about and likes to work in contrast to other patients such as those suffering from neurocirculatory asthenia. Exophthalmos is a very helpful sign, but it is encountered only in toxic diffuse goiter (with few exceptions) and even then in only about one-half the patients suffering from toxic diffuse goiter. It should be remembered that in about 10 per cent of patients with toxic goiter there is no palpable enlargement of the thyroid gland. Patients with toxic goiter usually have an increased appetite (unless in the precrisis state) in contrast to patients suffering from other diseases.

As stated above, very few patients with toxic nodular goiter have exophthalmos. The manifestations in this disease develop much more insidiously. The toxicity averages much lower than in toxic diffuse goiter. In a charity clinic at least one-third of the patients suffering from toxic diffuse goiter will have a varying degree of cardiac decompensation which manifests itself usually by fibrillation. Although patients with toxic diffuse goiter may complain of shortness of breath they rarely have fibrillation, edema of the ankles, or other manifestation of decompensation.

In view of the similarity of the clinical manifestations of hyperthyroidism to those of other diseases, it is imperative therefore that the clinician give serious thought to differential diagnosis, particularly from such diseases as pulmonary tuberculosis, leukemia, hypertension, endocarditis and neurocirculatory asthenia.

In a patient with severe toxicity, the diagnosis will be obvious. Difficulty will be experienced only in the patients with a mild degree of thyrotoxicity. In such patients an accurate diagnosis can be made by giving the patient a trial test with several days' treatment with iodine. The patient with hyperthyroidism sustains a very definite positive improvement. This delay in making a diagnosis is not at all harmful since the patient with such a mild degree of hyperthyroidism is not injured by such delay. Obviously, no radical or active treatment should be instituted before an accurate diagnosis is available. We have not found propylthiouracil and thiouracil as effective as iodine in making this diagnosis since their action is slower than that of iodine, although ultimately much more effective.

Use of Antithyroid Drugs of the Thiocarbonamide Type

In a study of 220 antithyroid compounds, Astwood and associates[2] discovered two types of drugs exhibiting antithyroid activity. The most useful compound of this series contains a thiocarbonamide grouping and includes such drugs as propylthiouracil, thiouracil and thiourea. Less active drugs contain an aminobenzene grouping, including para-aminobenzoic acid, sulfaguanadine and other sulfonamide compounds. Of all the drugs reported up to date, propylthiouracil is the most valuable, largely because it has an action equal to that of any other and is much less toxic.

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*From the Department of Surgery, University of Illinois College of Medicine, Chicago, Illinois.

The dose of propylthiouracil is 200 to 225 mgm. per day although in patients with severe toxicity it may be necessary to give as much as 300 mgm. per day. The original dose should be continued until all signs of hyperthyroidism are abolished (Astwood). After this period the dose may be reduced to one-half or one-third the original amount. Lahey and associates[3] have noted that the basal metabolic rate in hyperthyroidism is reduced about 1 point per day by propylthiouracil or thiouracil. The effect is more rapid in toxic diffuse goiter of short duration and least rapid in toxic nodular goiter of long duration. Administration of iodine slows up the effect slightly but not to a serious degree.

TABLE I

Relationship of Type of Gland and Duration of Symptoms to Rapidity of Response to Thiouracil

(Lahey Clinic Series, Bartel[4]

Type of Goiter	Duration of Symptoms	Avg. Rate of Fall of BRM Daily
Toxic Diffuse	Under 6 mo.	1.3
Toxic Diffuse	Over 12 mo.	1.1
Toxic Diffuse with previous Iodine Rx	Under 6 mo.	1.0
Toxic Nodular	Under 6 mo.	.64
Toxic Nodular with previous Iodine Rx	Over 6 mo.	.45

In 260 patients treated with propylthiouracil, Lahey and Bartel[3] noted an incidence of reaction in only 2 per cent of patients. Of this group of patients having reaction, one had fever and five had leukopenia. Of the five patients with leukopenia, one had agranulocytosis. However, none of the patients with reactions died. In 180 patients treated with propylthiouracil, Astwood[4] has likewise noted very few toxic reactions. In the first 100 cases treated by him four patients complained of itching of the skin; in two of these there was an urticaria.

TABLE II

Incidence of Toxic Reactions Following Use of Thiouracil*

(Data compiled from the literature, [5,6] and our own personal experience[14])

Types of Reaction	Most Frequent Time of Occurrence	Incidence
Agranulocytosis	7-16 days or after 7 mo.	1.7%
Leukopenia	25-56 days	4.4%
Pruritis and Dermatitis	25-90 days	4.0%
Fever	1-28 days	3.0%
Nausea, vomiting, diarrhea, headache	1-14 days	Less than 1%
Lymph or salivary gland changes	15-95 days	Less than 1%
Jaundice	14-54 days	Less than 1%
Death	3-60 days	0.45%

The dose of thiouracil is now fairly clearly established at 0.6 gm. per day divided into three or four doses. The maintenance dose after elimination of thyrotoxicity varies but should be between 75 and 150 mgm. per day. Thiouracil is being displaced by propylthiouracil because of the serious reactions sustained by the former drug. In a series of 2000 cases reviewed from the literature we have noted that reactions were sustained in about 13 per cent of patients treated with thiouracil. (See Table 2). Agranulocytosis was present in 1.7 per cent of cases. A mortality rate of 0.45 per cent was noted; practically all of the deaths occurred in patients having agranulocytosis. The other types of reactions are summarized in Table 2.

When antithyroid compounds are being used, the patients must be watched closely although it is now agreed that they may be treated ambulatory. Blood counts, including differential should be done every week. If thiouracil is being used, they should be done two times a week, particularly in the early stages of treatment, although it should be emphasized that agranulocytosis may develop at any time during the course of treatment. On numerous occasions it has developed ten or twelve weeks after therapy was instituted. There is a tendency for increased incidence of reaction when the patient has had the same drug previously with a period of no therapy intervening between courses of treatment. If the white blood cell count drops below 3,000, treatment with the antithyroid drug should be stopped immediately. In most of these patients the white blood count will come back up within a few days after stopping the drug; it is rarely safe to resume treatment with the same antithyroid drug although another may be tried cautiously. In our series of 100 patients treated with thiouracil we abandoned therapy in 9 per cent of patients due to one type of reaction or another. We had no deaths in our series, but it is probable that our extreme caution may have been responsible for lack of complications with agranulocytosis. Penicillin should be given when agranulocytosis develops and should be continued until the complication is eliminated. Transfusions are helpful but no therapy can be considered very effective.

Remissions or Cures—Early in his experiences with antithyroid drugs Astwood noted that if therapy was continued from six to nine months many patients appeared to have a lasting or permanent remission with freedom from symptoms of thyrotoxicity. Because an insufficient length of time has elapsed since the introduction of antithyroid drugs, we are unable at the present time to predict how many of these patients with remissions have sustained a permanent remission and how many will ultimately recur. We already know that recurrence is very common in these patients, although treatment is continued for eight to nine months before therapy is stopped. We have noted that patients with small glands and a low degree of toxicity are much more apt to sustain a lasting remission than patients with large glands and severe toxicity. Astwood has called attention to the fact that patients having had hyperthyroidism for a long period of time are less apt to sustain a lasting or permanent remission.

TABLE III

Remission after Thiouracil Therapy

No. of Cases	Avg. Initial B.R.M.	Mo. of Therapy Avg.	Per ct. Recurrence
13	+57	7.0	61
Remarks. Average 5.5 months between cessation Thiouracil and recurrence			
10	+34.5	6.3	11
Average interval since cessation Thiouracil, 11.2 months.			
7	+24.1	6.8	0
30			

33⅓ per cent recurrence averaging all groups.

Table 3 summarizes our experiences with remissions after thiouracil. In seven patients having a basal metabolic rate averaging +24.1 per cent, there were no recurrences after drug therapy was stopped. On the contrary, in thirteen patients having an initial basal metabolic rate averaging +57 per cent, the recurrence rate was 61 per cent. Although Table 3 reveals only a 33⅓ per cent recurrence in the thirty patients treated by us over an extended length of time, this cannot be considered to be an accurate index of the permanent effectiveness of the drug since patients in this series to a great extent were picked for treatment without thyroidectomy. In other words, it contains a very large percentage of patients with small glands and mild toxicity.

Advantages and Indications for the Use of Antithyroid Drugs

The advantages of treatment with antithyroid drugs will vary, depending upon the type of drug used. Propylthiouracil has greater advantages than thiouracil because of the severe reactions sustained by the latter drug.

1. Elimination of Hyperthyroidism in 95 to 100% of cases. It is now clearly established that propylthiouracil and thiouracil will eliminate thyrotoxicity in almost all patients if the drug can be continued long enough and in sufficient doses. This represents a very great advantage over the previous methods of treatment because the majority of deaths following thyroidectomy following hyperthyroidism occurred in patients with severe thyrotoxicity. It is obvious then that the treatment of hyperthyroidism with propylthiouracil will be indicated regardless of whether the physician chooses to treat the patient medically or surgically.

2. Lasting remissions in 50 per cent of cases. Although insufficient time has elapsed since the introduction of antithyroid compounds to determine how lasting the remissions will be, it is obvious now that remissions can be achieved in about 50 per cent of the patients with thyrotoxicosis.

3. Treatment of patients with cardiac decompensation. Previous to the introduction of antithyroid compounds the mortality rate of thyroidectomy in patients with cardiac decompensation was high largely because cardiac reserve was so low. Utilizing antithyroid drugs, the hyperthyroidism can be abolished and treatment continued until cardiac decompensation is eliminated and a fair cardiac reserve established. It is therefore obvious that all patients with cardiac complications associated with hyperthyroidism should first be treated with antithyroid drugs.

Disadvantages of Antithyroid Drugs

1. Toxic reactions. The incidence of 13 per cent reactions in treatment with thiouracil has been considered a contraindication for therapy for this drug. It appears, however, that the incidence of 2 per cent reaction following the use of propylthiouracil may eliminate the objection to the use of the drug.

2. **Slow action.** Many patients and physicians become impatient with the duration of treatment and prefer the more rapid therapy with administration of iodine followed by thyroidectomy.

3. **Useless or contraindicated in crisis.** The author is of the opinion that none of the antithyroid drugs in use up to date are of value in crises largely because the patient will be well on the road to recovery, or would have succumbed, before much effect from the drug can be achieved. The great danger of using antithyroid drugs in a crisis lies in the possibility of a reaction. If a reaction is sustained, its added load is apt to be sufficient to produce death of the patient.

4. **No decrease in size of gland.** None of the antithyroid drugs used to date produce significant decrease in the size of the thyroid. Originally there was a fear that carcinoma might develop with increasing incidence in nodular goiter after elimination of thyrotoxicity. However, in no instance has carcinoma in such glands been reported.

5. **Increases vascularity of the gland.** Antithyroid drugs produce a marked increase in vascularity of the thyroid gland. Until we learned that iodine eliminated this increase in vascularity, it added considerably to the complications of thyroidectomy.

PREOPERATIVE TREATMENT

Preoperative treatment will vary, depending upon whether **propylthiouracil** or **iodine** is being used. Regardless of the type of therapy adopted, an **increased caloric intake up to 4000** or **5000** calories per day is indicated. If the patient is extremely toxic, an effort should be made to **eliminate psychic trauma.** He should be removed from surroundings which tend to aggravate his symptoms. An overworked mother with several unruly or ill children should be removed from these surroundings for a few days if toxicity is severe. Since patients with hypertension are burning calories at a greatly increased rate, it is obvious that **manual labor cannot be continued** without severe damage to the body as a whole. However, since the patient with hyperthyroidism is apprehensive and tolerates sedentary life poorly, he should be allowed up and encouraged to do things which will occupy his mind. **Treatment of complicating diseases must** be effective. Common ones are diabetes, cardiac decompensation and hepatic insufficiency. Large doses of calcium, vitamin C and B_1 should be given.

If propylthiouracil is being given preparatory to thyroidectomy, iodine should be given for ten to fourteen days before operation; the former drug should be discontinued five to six days before operation because of the danger of development of a serious reaction such as agranulocytosis at the time of operation.

Prerequisites for Bilateral Thyroidectomy

If propylthiouracil is being used and the hyperthyroidism has been abolished, little attention need be given to the prerequisites mentioned below. However, the author wishes to make a plea that we not abandon the valuable information in prerequisites gained over the past three or four decades. It is essential that we maintain this knowledge, because until the disease disappears we will always be confronted with patients coming into the hospital in crisis. In such patients all the knowledge acquired about the treatment of hyperthyroidism will be necessary.

1. **Gain in weight and strength.** If iodine administration followed by thyroidectomy is the method of choice, this prerequisite must be met. It is a serious error, indeed, to operate upon a patient with hyperthyroidism who has not gained weight, particularly if the hyperthyroidism is of severe degree. He need not gain all the weight lost but must show appreciable gain.

2. **Resting pulse rate should be below 110.** Since the pulse rate is a fairly accurate index of toxicity (except in the presence of cardiac disease) the pulse rate becomes an important prerequisite in determining time for operation if antithyroid drugs are not used in the preparation of the patient. Previous to our experiences with antithyroid drugs, we had noted that patients having a resting pulse rate above 110 at the time of operation were apt to have a stormy convalescence after thyroidectomy. In some patients the resting pulse rate may be considerably below 110 but it may rise to 120 or 130 with mild excitement. The toxicity in these individuals can be considered to be greater than what might be anticipated.

3. **Basal metabolic rate should be less than 50 per cent above normal.** Although all of us admit that the basal metabolic rate will be inaccurate on innumerable occasions, yet it will reflect a fairly accurate indication of

toxicity in about 80 per cent of patients. In general, patients with a rate less than 50 per cent will not have complications of the crisis or precrisis state following thyroidectomy.

4. **Response to iodine or antithyroid drugs.** Patients with severe toxicity must reveal a favorable response to drug therapy before operation can be considered.

5. **No untreated complications.** As indicated previously, all complications must be eliminated before thyroidectomy can be accomplished safely. Fibrillation may be considered to be an exception to this statement largely because this complication frequently cannot be eliminated before operation except perhaps with prolonged treatment with antithyroid drugs.

OPERATIVE TREATMENT IN TOXIC GOITER

Details of operative technic will not be given in this presentation but certain pertinent factors regarding the operation will be presented.

Two or three different types of anesthesia will be acceptable although the author prefers ethylene; if thyrotoxicity is abolished, or of mild degree, a local anesthesia will be acceptable. Cyclopropane allows the use of a lot of oxygen, but is undesirable in patients having cardiac complications. Nitrous oxide permits the use of so little oxygen that no one except an expert anesthetist should use this agent.

The amount of gland left at the time of operation is controversial. However, there is no question but what less gland should be left in severely toxic patients with small glands. The author is of the opinion that in such cases no more than 1 to 2 gm. of tissue should be left on each side with the posterior capsule. In patients with large glands and mild toxicity, 5 to 6 gms. of tissue may be left on each side without the danger of recurrence.

The author does not isolate or identify the recurrent laryngeal nerve routinely, but it is essential to do so when nodules project posteriorly. The ribbon muscles need not be cut to expose the thyroid, but if there is any difficulty about exposure, there should be no hesitancy about cutting these muscles transversely. Likewise the surgeon should not hesitate to move the opposite side of the table when exposure on that side is difficult.

POSTOPERATIVE CARE

Careful postoperative care will save many lives following thyroidectomy because of the seriousness of certain complications discussed later. The patient is placed in a sitting or half sitting position as soon as he has recovered from the anesthetic. He may be allowed water or other fluids by mouth shortly after the operation but they should not be forced since vomiting is apt to occur. Vomiting is undesirable because of the tendency to produce postoperative hemorrhage during the first 12-hour period following operation. A liquid diet can be given late in the day of operation and by the following morning soft food is permissible and readily taken. On the day following the operation the patient may be up if desired, unless severe toxicity was present at the time of operation. The average patient having thyroidectomy for toxic goiter can be sent home on the fourth or fifth day postoperatively.

COMPLICATIONS

As indicated previously, the mortality rate following thyroidectomy will depend to a great extent upon the effectiveness of postoperative treatment and the astuteness of the surgeon in early detection of complications.

Hemorrhage. In spite of usual precautions in the ligation of bleeding points during thyroidectomy, there will be a slight incidence of hemorrhage although extreme care in hemostasis will decrease its frequency. All patients must be watched closely for signs of hemorrhage for ten to fourteen hours after operation. Perhaps the earliest sign of hemorrhage is restlessness. Breathing may be noisy although stridor is a late symptom of hemorrhage. Slight voice change occurs early although loss of voice is likewise late and usually indicates that the recurrent laryngeal nerves have been blocked temporarily by pressure or infiltration. Cyanosis is a late sign of hemorrage. Inspection of the wound will usually reveal swelling. If there are prominent manifestations of hemorrhage it is desirable to open the wound, evacuate the clot and ligate the bleeding points. If the patient is cyanotic and exhibiting considerable stridor, this procedure may have to be done in bed in the patient's room, perhaps under poor aseptic technic. However, the danger inflicted by delay of ten to fifteen minutes in transporting the patient to the operating room may be sufficient to cause death.

Injury to the recurrent laryngeal nerves. It should be emphasized that severance of one nerve usually results in considerable voice change, although there is rarely much difficulty with breathing. Occasionally, no change in voice will be detected. It may, therefore, be difficult to discern when the nerve is injured in the operating-room. However, if the surgeon and anesthetist are watching carefully, they will usually detect a slight change in breathing at the time when the nerve is injured. If both nerves are injured difficulty in breathing will have been present before the patient left the operating room. It should be emphasized, however, that extravasation of blood and edema incident to operation may damage one or both nerves several hours after operation, with consequent interference with breathing because of cord paralysis. Accordingly, the patient must be watched for signs of early evidence of difficulty with his airway. If both nerves are severed, tracheotomy will be necessary in almost all instances. When the nerve damage has been produced by hemorrhage, cord function frequently returns when the clot is evacuated. However, if there is any question about the patency of the airway, it is usually desirable to do a tracheotomy.

Recurrent and persistent thyrotoxicosis. Differentiation must be made between recurrent and persistent thyrotoxicosis, since the latter complication may be direct evidence that insufficient thyroid gland was removed at operation. Inadequate removal may also be responsible for recurrent thyrotoxicosis but not always. In general there may be a higher incidence of recurrent and persistent thyrotoxicosis in patients with large amounts of tissue left at operation.

Myxedema—In an effort to eliminate the possibility of recurrent hyperthyroidism, sufficient gland will frequently be removed to result in hypothyroidism or perhaps myxedema, although the author has rarely encountered a true myxedema following thyroidectomy. Obviously if the hypothyroidism is sufficient to result in symptoms, it will be necessary to give desiccated thyroid. This is undesirable but the necessity of taking one or two pills per day would not be considered a very complicated form of treatment.

Tetany. The incidence of tetany will obviously be increased in patients when fairly complete thyroidectomy is performed, although carefulness on the part of the surgeon in preserving parathyroids will minimize the actual incidence. However, since parathyroids are commonly embedded in the thyroid gland, tetany will develop now and then in all series, although on most occasions the complication is not permanent. As soon as the disease is detected, parathormone along with large doses of calcium should be administered. After a few days' treatment with parathormone it is usually desirable to change to dehydrotachysterol since the patient usually becomes resistant to the former drug.

Crisis. Even though antithyroid drugs are not given, postoperative crisis is an extremely rare complication largely because clinicians have discovered how to minimize hyperthyroidism and have discovered the necessity for choosing the correct time for thyroidectomy. It must be emphasized, however, that now and then patients will come to the hospital in crisis developing spontaneously, usually in the summer months. The treatment in crisis is extremely unsatisfactory. The patient should be put to bed rest in a darkened air-conditioned room. Sedatives must be given. If the patient is extremely apprehensive, there may be considerable difficulty in obtaining proper sedation. In general, the combined use of morphine and one of the barbital compounds will give the most desired effect. Since the patient is burning up calories at a tremendous speed, the caloric intake must be pushed to a maximum. Patients in crisis will rarely eat a sufficient amount to maintain their needs. The administration of a liquid diet, through a nasal tube is usually very helpful, although vomiting not infrequently develops during this type of therapy. High doses of calcium, vitamin C and B_1 should be given. A large amount of fluid must be administered daily. If the patient is sweating considerably, his fluid requirement may be as high as 5000 cc. per day.

Progressive Exophthalmos. Occasionally exophthalmos continues after thyroidectomy and actually increases in severity. If the protrusion of the eyeball is sufficient to prevent proper lubrication of the cornea because of inability to close the eyelids, there may be extreme danger of corneal ulceration. Decompression by removal of the bony roof of the orbit, as suggested by Naffziger, may be necessary. It should be performed before ulceration develops.

RESULTS OF SURGICAL TREATMENT

Thyroidectomy for toxic goiter may be considered a very satisfactory type of operation. Symptomatic relief will be experienced in at least 90 per cent of the patients, although 20 to 25 per cent of these patients may still complain of mild residual symptoms.

TABLE IV

Mortality Rate of Thyroidectomy
(1936-1946)

Toxic Diffuse	487	3	0.61)	
Toxic Nodular	315	5	1.58)	0.99*
Nontoxic Nodular	292	2	0.69	
	1094	10	0.91	

*27 had thiouracil

The mortality rate will vary considerably in the various clinics due largely to variations in the carefulness of preparation of the patient and choice of time for operation. In general the mortality rate should be below 1.5 per cent. In our series of over 100 patients, the mortality rate was 0.91 per cent (see Table 4). It may be surprising that the mortality rate, as illustrated in Table 4 is actually higher in nontoxic nodular goiter than in toxic diffuse goiter. This is explainable because the patients with nontoxic nodular goiter in our series were much older than those with toxic diffuse goiter. In the series of 292 nontoxic nodular goiter, two patients died of acute heart failure (see Table 5), a complication which will be more common in older patients.

TABLE V.

Causes of Death Following Thyroidectomy

Toxic Diffuse	3	(1 Acute Hepatic Insufficiency (1 Tetany (1 Crisis
Toxic Nodular	5	(1 Hemorrhage (1 Crisis (1 Severe glucose reaction (1 Acute heart failure (1 Gas gangrene of buttock
Nontoxic Nodular	2	(2 Acute heart failures

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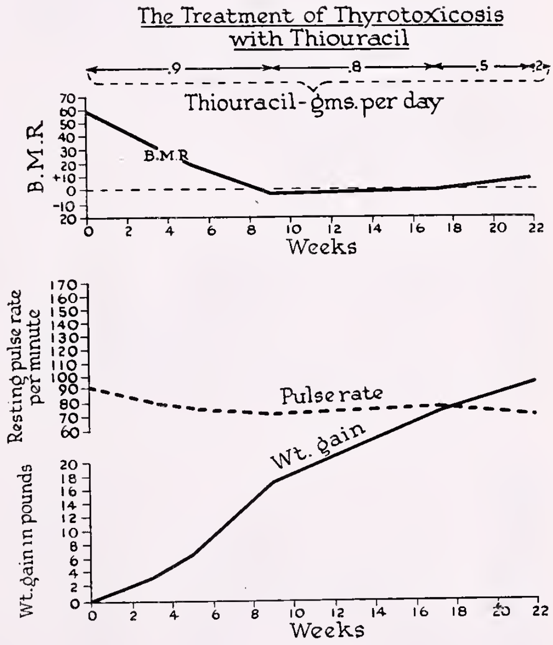

Fig. 1. Average response of hyperthyroidism to thiouracil. The basal metabolic rate was reduced from 60 to 0 in eight weeks, representing a drop of about one point for each day of treatment (after Cole and Fowler in Surg., Gynec., and Obst., 1946).

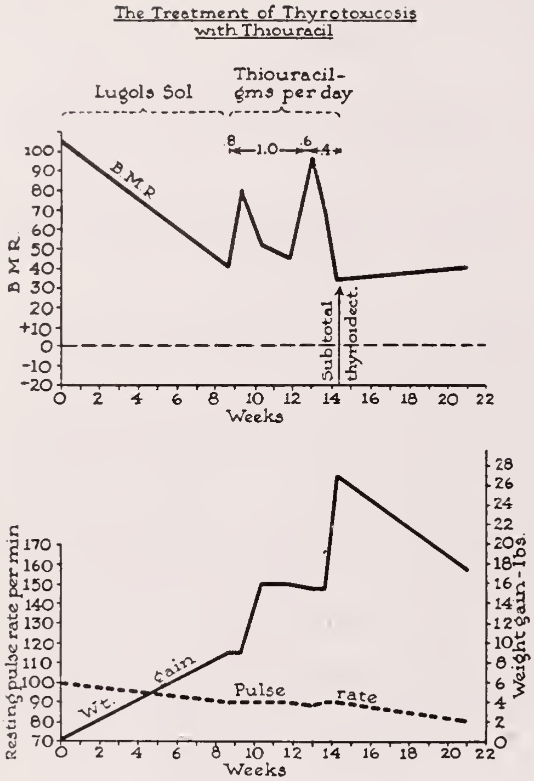

Fig. 2. Unusually rapid response to thiouracil which is perhaps explained for the most part by inaccuracy of the initial basal metabolic reading (after Cole and Fowler in Surg., Gynec., and Obst., 1946).

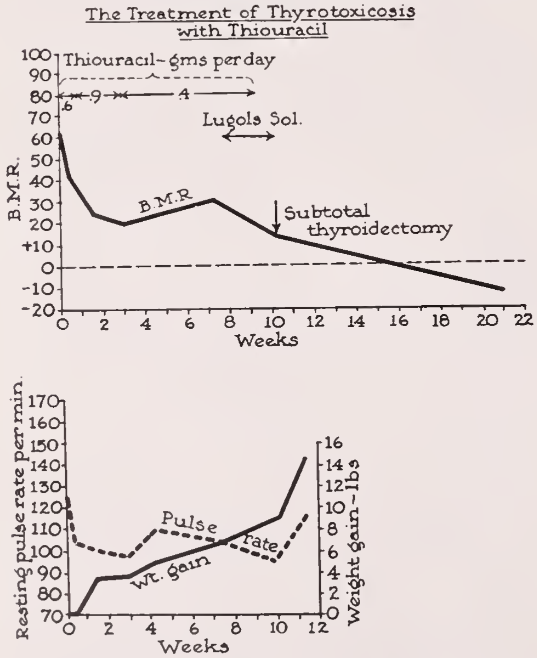

Fig. 3. Unusually slow response to thiouracil. After seventy-three days of therapy, the basal metabolic rate had receded only 45 points (after Cole and Fowler, in Surg., Gynec. and Obst., 1946).

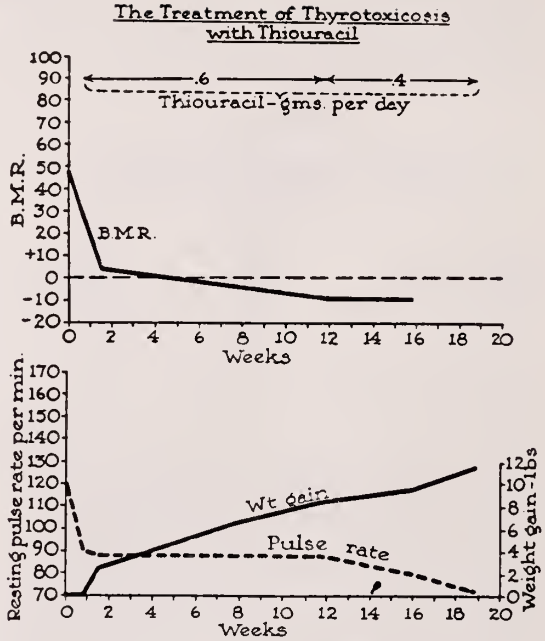

Fig. 4. Deleterious effect of preliminary course of iodine on the response to thiouracil. Previous to six weeks' treatment with thiouracil, the patient had received Lugol's solution for eight and one-half weeks. The six-week period of treatment with thiouracil resulted in no reduction in the basal metabolic rate, although there was considerable weight gain and a slight decrease in severity of symptoms (after Cole and Fowler in Surg., Gynec., and Obst., 1946.)

The Association for the Advancement of Research and Multiple Sclerosis, Inc., announced recently the receipt of a three year grant for $64,350 to finance specialized research on multiple sclerosis. The study will be conducted at the Columbia University, College of Physicians and Surgeons and at Neurological Institute, under the direction of Dr. Elvin A. Kabat, Assistant Professor of Bacteriology at Columbia University.

The Foundation has also announced on July 11, receipt of a contribution of $25,000 from Mrs. Percy S. Straus, mother of Mr. Ralph I Straus, a Director of R. H. Macy and Company, who has recently become a Director of the Association for Advancement of Research on Multiple Sclerosis. Mr. Straus, in presenting the contribution on behalf of his mother, stated that he was familiar with the disease because of its appearance in a member of his own family. With this contribution, the Association's initial goal of $100,000 for research on multiple sclerosis, has been met.

Experiences with Vascular Injuries in Africa and Italy*

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OUR experiences with vascular injuries in major blood vessels was very interesting to use as the majority of us had had very little pre-war association with this hazardous condition.

I am frank to admit that I was pretty much at sea as to what to do with these cases in the beginning. Of course, the first thing to do was to save the patient's life, that is, several of these aneurisms appeared as if they would rupture and the patient hemorrhage to death. So, naturally, the only recourse was to ligate the artery even if such threatened gangrene of the part, and yet one hesitated to do this if there was any other alternative. So the next question was would we attempt to suture the ends of the vessel together by doing one of the types of endo-aneurysmorrhapy. We finally felt that a more conservative method as advocated by our predecessors should be the procedure of election and began to promote collateral circulation by what simple means that were available to us at the time. These consisted of digital pressure proximal to the aneurism for five minutes every hour, lumbar sympathetic and stellate ganglion blocks, papaverine when available and keeping the extremity just moderately warm. We used ice during a later period of the work in Italy, when it was available, but it just didn't prove to be of any material benefit. Wirtshafter's work of histamine and vitamin C (sodium ascorbate, had not been published. We waited on the average of from six to eight weeks before we did any operative procedure on the arterial aneurisms and arterio-venous fistulae except in two cases where impending rupture seemed evident. Both of these cases were aneurisms of the right radial artery due to shrapnel. One case was two weeks posttrauma and the other three weeks posttrauma. The clots were evacuated in both cases and in the first one only one-third circumference of the vessel was cut through, this being sutured with 6-0 black silk suture on atraumatic needle approximating intima to intima with continuous interlocking suture. In the other early case the vessel was cut through two-thirds its diameter so a completion of the severance with ligation was done doubly, proximally, and distally with resection of a small segment of the artery and vein.

It was felt that the basic principle of the handling of these cases at the time of operation was complete and adequate exposure, hemostasis by use of pneumatic blood pressure cuff proximal to the operative site. Where this is impossible as in the carotid, axillary and iliac vessels, temporary ligation with umbilical tape or rubber tube traction was necessary. Although a free flow of blood from the distal segment is a good sign as adequate collateral circulation, this end must likewise be controlled with tape temporarily until the vessel is sutured or ligated. For all practical purposes in our experience at the 78th Station Hospital after the establishment of an adequate collateral circulation, the evacuation of the clot with proximal and distal ligation of the artery and associated vein gave excellent results in the brachial below the peroneal branch, radial artery, ulna artery, anterior and posterior tibial arteries and femorals below the profunda femoris. In the cases with aneurisms above the profunda and in the popliteal artery the vessel must be anastomosed as ligation in two femorals and two popliteals resulted in gangrene. Also aneurism of axillary artery above the subscapularis and humeral circumflex vessels and thoraco-acromials must be anastomosed, or gangrene will follow. In two other femorals above the profunda and two popliteals that were sutured one femoral and one popliteal got by without gangrene. We had one axillary arterial aneurism that was ligated below the subscapularis that was successful and received collateral circulation between thoraco-acromial and subscapularis and

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*From Surgical Service of 78th. Station Hospital Overseas.

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The opinions in this article are those of the author and are not to be construed as official or reflecting the policy of the U. S. Army Medical Corps.

circumflex humeral vessels. And two arteriovenous fistulae of the right and left femoral artery and vein below the profunda in which quadruple ligation of the artery and vein was done with resection of a segment of vein and artery with fistulous tract with good results. All attempts at simple ligation of the fistulous tract have resulted in recurrence after four to six months.

There was one gluteal aneurism in this series which was ligated successfully and one of the external iliac which was ligated with no complications. One common carotid artery aneurism ruptured in the admitting tent and expired before control could be established, although digital pressure was applied by one of the corpsmen. Autopsy revealed a rent in the posterior wall of the vessel with the mediastinum containing 800 cc. of blood.

The great danger in the suture of the vessel when there is near complete or complete severance is the development of a thrombosis at the suture line. This we observed in several cases evacuated to us from other hospitals in femoral and brachial sutured vessels. Although the circulation was adequate through the collaterals there was no pulsation in the dorsalis pedis, posterior tibials or radial arteries. These extremities would have survived by ligation, extraction of the clot and resection of small segment of the artery and vein.

Metal and plastic tubes and segments of associated veins have been used to bridge the gap left by large vessel loss of substance, but these are merely of academic interest as they are all followed by thrombosis of the vessel at the sites of insertion of the foreign material.

I shall refrain from a long historical discussion of this subject but I do feel that a mention of the pioneers in this field of vascular surgery should be mentioned, namely, Matas, Gage, Reid, Rives, Bigger and Elkin.

Basically, the original idea of Dr. Matas was carried out in these cases. That is, the development of an adequate collateral circulation by digital pressure at regular intervals and for specific length of time. In addition to this basic principle the modern technique of Ochsner of lumbar and stellate ganglion blocks, both pre- and postoperatively were added. These blocks with 2 per cent procaine into the regional ganglia were carried twice daily and for as long as was necessary to maintain the circulation adequate.

We have had four cerebral aneurisms, congenital in type. All these were ruptured aneurisms in relatively young individuals. Two were in males, both of whom died. One of these was verified at autopsy. Two others were in females. One died and one recovered. The cases of so-called spontaneous subarachnoid hemorrhage in young individuals, unassociated with a febrile condition and unassociated with external trauma, for all practical purposes are due to a rupture of a congenital aneurism of the basilar artery of the circle of Willis. One of these cases was seen by a recognized neurosurgeon who verified the diagnosis.

There was another very interesting case of a child of fifteen years of age who had a blood dyscrasia who developed a to and fro murmur over the right chest caused by a micotic arteriovenous fistula between the right pulmonary artery and vein. This case was seen in Cleveland, Ohio, last winter and she made a complete recovery following a right total pneumonectomy with removal of the aneurism by Dr. S. O. Freedlander.

Dr. John Moorehead, through the coöperation of the intertransit and subway systems of New York City, has contrived a very ingenious mechanism by which he coagulates the blood in aortic arch aneurisms. The aneurismal sac is aspirated with a long needle through which is threaded silver wire which is soft and curls up into the aneurismal sac. A small amount of electrical current is then turned on and connected to the wire. The eddies set up in the aneurism come in contact with this electrical current and cause the blood to coagulate, thus closing off the opening to the vascular system and preventing rupture of the aneurism. We are all familiar with the numerous aneurisms of the abdominal aorta which have been ligated, the first of which it is said was done by Dr. Carl Hamman, Cleveland, Ohio, many, many years ago.

Some types of suture of the arteriovenous fistula must be done where the popliteal, the carotid, the femoral above the profunda, and the axillary above the humeral circumflex and subscapularis branches are involved. The obliterative endo-aneurismorrhaphy of Matas by opening the sac and a closure of the artery through the vein is the best procedure. Of course, it goes without saying that a temporary proximal and distal ligation is necessary before the artery is closed. There may be multiple openings into the sac that will have to be closed individually and the sac then obliterated.

In doing the quadruple ligation and resection of the involved segment in arteriovenous fistula, one has to be extremely careful to dissect off the all important collaterals. This is tedious, but absolutely essential as an inclusion of them with the resection produces gangrene. In these vital areas as mentioned where the vessel wall is destroyed by one half of its diameter or more, one is probably justified in using some sort of foreign material or a section of the adjacent vein to bridge the gap, but a thrombosis is very likely to occur in the abridged venous segment. It is true that less suturing is used in the abridgement with plastic and steel tubes. Whether these will prove the test of time is very doubtful in my mind.

The following cases were done at the 78th Station Hospital in Africa, Italy, and on the invasion of southern France.

The first case was done on an Italian prisoner of war and as none of us had had any actual experience with these cases we called on Dr. Berry, the chief of surgery of the Roosevelt Hospital Unit, to perform the operation. Strangely enough, this aneurism was almost incised as an abscess by one of the surgical auxiliary group who was with our unit for a short while. The case was put on digital pressure to develop the collateral circulation and the stellate ganglion was blocked twice daily for six weeks as this was an aneurism of the right brachial artery. Dr. Berry placed a blood pressure cuff around the right arm proximal to the aneurism and then made an incision directly over it and with sharp dissection the proximal and distal parts of the artery were isolated and temporarily occluded with umbilical tapes. This cut off the circulation both to and from the aneurism for the time being. The sac of the brachial artery was then opened, the clot removed, as well as the foreign body which was usually a small piece of shrapnel or flak. The perforated or bisected site was then located and it was a rule that if one-half or more than one-half the diameter of the vessel was destroyed, a small segment one-fourth to one-half inch was removed and the ends of the vessel ligated doubly with heavy black silk and transfixed. If less than one-half the vessel was lacerated this was sutured with 6-0 black silk on atraumatic needles. In this case more than one-half the diameter of the vessel was destroyed so a small segment with the sac was removed. The temporary umbilical tape ties were released and there was no bleeding, so sulfa crystals were sprinkled into the incision and the wound was closed in layers with interrupted sutures and the arm placed in a splint for ten days, at the end of which time if there was no associated fracture, and there was none in this case, first passive then active exercises were begun. The case made an uneventful recovery with no infection. Sulfa was given orally. That was in 1943, so penicillin was not available at that time.

This looked simple and, as the other cases were picked up on my service, I undertook the task.

My first case was picked up by the officer of the day who was called to see a case that came in the night before and, suddenly, began to have severe pain with rapid swelling in the region of the right elbow. The O. D. ordered an x-ray and found a compound fracture of the right radius upper third. The pain necessitated a hypodermic and a splint until morning when I saw him. Auscultation revealed a loud bruit over the swollen area. The radial pulse was hardly palpable so stellate ganglion blocks were done twice daily and very soon the pulse improved and digital pressure was begun above the aneurism for further development of the collateral circulation. This was rapidly developed in six weeks. The skin over the compound fracture had healed, so the aneurism was operated upon and the temporary ligation placed on proximal and distal to the sac. The sac opened and the laceration was greater than one-half the diameter of the vessel, so a small segment with the sac was removed and the proximal and distal ends of the vessel doubly ligated with transfixing sutures of black silk. As in all these cases there is some fibrosis of the tendons and fascia and muscles so that often when the fracture healed the motion in the elbow was limited slightly.

The next case was an aneurism of the left brachial artery. The routine policy followed of digital pressure blocking of stellate ganglia, sulfa drugs until temperature was normal, following shrapnel wound of left arm and incision with temporary proximal and distal occlusion with umbilical tapes, the sac opened and clot removed. The point of laceration isolated which proved to be greater than one-half the diameter of the vessel, so a small segment of the artery with the aneurismal sac was removed and the proximal and distal ends of the brachial artery ligated with transfixing suture of black silk. Convalescence was uneventful, with circulation and skin temperature normal following operation. Wound was closed in layers. Postoperative blocks of stellate ganglia were done with 2 per cent procaine.

The fourth case was done on a German prisoner of war who was admitted to my service with a F.C.C. of the right shoulder in Sicily two weeks previously due to small arms fire. A pulsating aneurism with a loud bruit was easily recognizable in the right axilla. Digital pressure was made over the right subclavian for three weeks as well as stellate ganglion blocks, until finally there was a pulse in the right radial at the wrist. There was a F.C.C. of the head of the right humerus and of the scapula in this case. An incision over the right shoulder extending down the arm about midway and well up over the shoulder was made. The pectoralis major was incised at its outer edge. The pectoralis minor was separated in the line of its fibers. The axillary artery was isolated and the aneurism located. Proximal and distal temporary occlusion with tapes were done. There were injuries to the brachial plexus in this case causing a paresthesia of the right arm, but patient could move his hand and elbow well, although there was some limitation of motion at the right shoulder. The aneurismal sac was opened and laceration found to be greater than one-half the diameter of the axillary artery so a ligation with removal of a small segment of the vessel was done, as the aneurism was below the anterior and posterior humeral circumflex and subscapularis arteries. Had it been above these collateral vessels gangrene would have been eminent. The wound was frosted with sulfa crystals and closed in layers. The right radial pulse was present immediately after operation. The stellate ganglion blocks were kept up for one week. The patient retained a right paresthesia of the right arm and hand due to injury of the shoulder due to the compound fracture. The wound healed *per primum* and circulation in the right arm and hand was good.

Case number 5 was on a Frenchman who had been wounded by a German sniper in Italy and was picked up by a lieutenant from a ship platoon who was doing detached duty on my service at the time, as we were servicing the French at Cassino. There was a pulsating mass with a to and from murmur over the right femoral artery just below the groin and below the profunda femoris. Digital pressure was begun every fifteen minutes and held for five minutes for six weeks. The dorsalis pedis and posterior tibials and popliteals were palpable. We felt that this was an arteriovenous fistula and that eventually there would be back pressure on the heart with enlargement. So I did a quadruple ligation with resection of the arteriovenous segment with transfixion and ligation of the proximal and distal segments. Lumbar ganglion blocks with 2 per cent procaine were done both pre- and postoperatively. The incision healed *per primum* and he made an uneventful recovery with good circulation in the leg and foot and, as there was no associated fracture, there was no limitation of motion.

The sixth case was on a soldier that I was called on to see in consultation with the medical service when we were set up in Bizerti, North Africa. The story was that he had P. vivax malaria and had been given quinine intramuscularly in the left buttock. He was running some fever 102° F, so the medical service wished to have the abscess drained. I was a little suspicious after having seen all those other traumatic aneurisms. So I elected to aspirate and I immediately withdrew bright red blood from an aneurismal sac. We were all set up in the OR so the needle was left in place connected to the syringe and a wide eliptical incision was made in the buttock and traumatic aneurism of the left gluteal artery was ligated and resected. His convalescence was uneventful.

The seventh case was done on a seventy-five-year-old French civilian who had received a F.F.C. of the left femur due to a bombing raid by the Germans at the town of St. Tropez, southern France, during the invasion. He had thrombosis of the left femoral artery above the profunda due to gas gangrene. His extremity was amputated at the upper third in the guillotine fashion with an uneventful recovery. There was no hope of saving the leg.

The eighth case was in an Italian P.O.W. who was rammed between two tanks and received contused wound of the abdominal wall. There was no laceration of the skin, but a Cullens sign was present. He was in considerable shock so two blood transfusions and plasma were given and the abdomen explored and a complete bisection of the small intestine with a wide V rent down through the mesentery with a severance of the superior mesenteric artery was found. The vessel was ligated and a long segment of the intestine resected and an aseptic end to end anastomosis done over the Furniss clamp with an uneventful recovery.

My experience with embolism is limited to one case in a nurse at Winter General Hospital, Topeka, Kansas, who developed an embolus of the right femoral artery as a complication of an endocarditis. The right femoral artery was opened and the clot extracted and vessel aspirated as far as the iliac vessel, but the vessel thrombosed at the suture line despite the continuous use of heparin and discoumarol preoperatively, during operation, and postoperatively. Sympathetic blocks and routine vascular care failed to promote enough collateral circulation for the leg to survive so a high thigh amputation was done one week later.

SUMMARY AND CONCLUSIONS

1. There are certain sites namely above the profunda femoris, the popliteal, the carotid, proximal to the subscapularis and circumflex humeral in the axillary artery where ligation and resection of the involved artery will result in 100 per cent mortality to the extremity.
2. Suture of the vessel wall if not more than one-third circumference is involved will allow adequate circulation.
3. Primary end to end suture results in thrombosis at suture site.
4. Conservative treatment for development of adequate collaterals is essential where rupture is not threatened.
5. Use of metal tubes and section of veins to bridge gaps left in arteries by wounds is of academic interest only.
6. Gas gangrene is not an uncommon complication.
7. Retrograde bleeding is a good prognostic sign as to adequate collateral circulation.
8. If one will remember the critical areas as mentioned and their associated collateral circulation in the anterovenous fistula and select the proper procedure for the pathology present little difficulty will be had with this generally considered serious malady. Quadruple and sextuple ligation and resection of the involved segment in other sites will be satisfactory, provided the aneurism has not become so large as to compress the collaterals completely. These collaterals must be carefully dissected off and preserved when quadruple resection and ligation procedure is used.

Note. Since the writing of this paper I have had a recent case of a ruptured congenital aneurism of the circle of Willis in a white male patient thirty-two years of age with no history of trauma. He had been sick for three days with severe headaches when first seen on July 15, 1947, and was in profound shock, cold and clammy. His pulse was very slow, numbering forty-two beats per minute. Blood pressure 110/70. Complaining with pain in the posterior cervical region of spine, nauseated and weak. He was admitted to North Mississippi Community Hospital in critical condition. His spinal fluid pressure was 18 mm. mercury and grossly bloody. He was kept perfectly quiet, with fluid intake limited and given vitamin K. After five days he began to improve, pulse going up to 80 per minute and headache improving until on the ninth day of hospital admission he developed an acute cholecystitis which fortunately subsided on conservative therapy. He has been discharged and is convalescing nicely.

Dr. G. H. A. Clowes, Ph.D., Sc.,D. LL.D., Director Emeritus of the Lilly Research Laboratories, was honored by the American Diabetes Association at its recent annual meeting in Atlantic City, New Jersey. He delivered the annual Banting Memorial address and was awarded the Banting Medal which is given in recognition of distinguished service in the field of diabetes.

Under Dr. Clowes' direction, the Lilly Research Laboratories coöperated with the University of Toronto and Drs. Banting and Best in the early development of insulin of sufficient purity and stability to permit its widespread clinical use throughout the world.

Some of the Causes and Suggested Treatments of Deafness*

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IN CHILDREN nearly all deafness is ascribed to a blocking of the eustachian tube, or to an otitis media which has extended to the middle ear along the eustachian tube from the postnasal space.

The treatment of the otitis media has been greatly simplified since the advent of sulfonamides and penicillin. If seen early before the drum is bulging and before pus can be seen in the middle ear auralgan locally along with sulfadiazine by mouth usually clears up the condition without myringotomy. But if there is pus in the middle ear it is better to do myringotomy and irrigate the external ear a few times. This helps prevent the formation of plastic adhesions and thereby helps preserve normal hearing.

Sulfadiazine in adequate doses is given until the ear is dry or at least for four or five days. Following myringotomy, I have found that omitting ear drops and irrigation after the first twenty-four hours allows the drum membrane to heal quicker.

A word about old chronic discharging ears in children is not out of place. These should be treated according to the individual doctor's experience and knowledge. No one drug will cure every case, but treatment should be persisted until the ear is dry. These ears should be cleaned out at least twice a week. Any fungi should be eliminated from the canal walls because fungus is present in a lot of chronic ears.

Granulations in the middle ear should be looked for and treated. Where an ear does not have too much discharge and remain dry after being sponged with cotton applicators, a powder insufflation is often of great value. If iodine dusting powder is insufficient a penicillin-sulfonamide mixed powder will often prove beneficial. If there is profuse discharge a course of penicillin or sulfadiazine may be given for systemic effect. Mastoiditis should be kept in mind.

Most of us have read the advertising circular which exhorts us not to blow the nose. This is sound advice for children, especially at the beginning or during the course of a bad cold or sore throat. The modern young mother who thinks her child's nose should be kept perfectly clean and who keeps holding a kleenex on both sides of the nose and milking the discharge out should be advised of its bad possibilities. I'm convinced that a large percentage of abscess ears are caused by blowing the nose or coughing.

The parent should be instructed on how to clear the nose posteriorly by a quick pulling inhalation, and the parents advised to teach the child this technique.

It is easier to stop an earache if the nose is shrunk on the affected side and cleared out at frequent intervals by a sucking motion through the nostril; and it is surprising how small a child can be and yet be taught such a maneuver. One might inquire why do this unless there is pus in the middle ear? And if there is pus in the middle ear the drum should be incised and the pus drained through the external canal anyway.

If there is an earache along with a bad cold there is pus in the postnasal space and at the mouth of the eustachian tube in a great many cases. A sucking of this out will certainly help. It will also help prevent the child from blowing its nose.

In regard to obstructive deafness Crowe and his students have done a constructive piece of research and study that will go down in medical history as one of the great achievements of its time. But because of this great work the possibility of finding other methods of approach or of adding the newer drugs to our methods of treatment ought not to be overlooked.

Science is not static. Not all of us own a radium tube and not all of us have found it satisfactory to collect a number of patients for a one day's use of a rented radon applicator. Before resorting to x-ray or radium I have been experimenting for the last five or six years with various drugs, and let me add here that I am not satisfied with all of my results. I'm looking for something better. I merely record my trials.

I began with an old prescription that I found fairly satisfactory in treating cervical adenitis in children—syrup of ferrous iodine in medium size doses. After removing the tonsils and adenoids I treated the nose and swabbed with tubal orifices with 25 per cent solargentum for two or three weeks. If the hearing didn't clear up or was slow to clear up I prescribed syrup of ferrous iodine. This medicine completely cleared up two of my first cases.

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*Read before the Section on Eye, Ear, Nose and Throat at the Mississippi State Medical Association, May 8, 1947.

Then I tried it on a case without removing the tonsils and adenoids, and the deafness cleared up in this case too. After an A. and T. I followed this case up with more syrup of ferrous iodine for a month and with good results.

One of my doctor friends suggested to me that syrup of hydriotic acid would do just as much good and would not stain the teeth. I tried this and found it satisfactory. A little later I began to use calcidrine.

A review of the literature on enlargements of the lymph glands assigns infection as the biggest cause. With this in mind it has seemed advisable to begin treatment with a course of sulfadiazine for a week or ten days. If I see the patient before adenoidectomy and its condition does not contraindicate an operation I operate first. While the child is recuperating I begin sulfadiazine dulcets on the third day and continue this for a week. This procedure keeps the throat from being excessively sore. It decreases the likelihood of postoperative hemorrhage due to infection and removes most of the infection that has made the lymph glands enlarge.

After a lapse of several days I begin a four to six weeks' course of calcidrine to aid in resolution of the smaller lymph glands remaining around the tubal walls. The hearing is checked from time to time to note the progress of recovery. Also the cervical lymph glands are observed and as long as these are present the patient is not considered well. This procedure does not work very well in adults. I've tried it on several cases and had only one case that I thought it benefited. This was an overweight patient that probably received help through the thyroid gland rather than from any lymphatic response.

Not all childhood deafness will respond to radium and drugs that reduce the lymph glands. A case of a very nervous child who had her adenoids removed twice and had radium applied postnasally by two different clinics was given a course of calcidrine and vitamins, but to no avail. Her nose was shrunk and the eustachian tubes inflated many times. She was referred to a distant clinic for examination, and returned with a diagnosis of petit mal. She was sent to a preventorium for rest. Nerve sedatives were given and this has done more for her hearing than all previous treatments.

It has long been known that systemic diseases could produce deafness. Some of these are beginning to be coördinated and made more understandable.

Kerrison in writing on the causes of high tone deafness mentioned the labyrinthine involvement in a majority of the cases. Since there is not too much written about what takes place in the labyrinth when it is in-'fluid, like vitreous opacities of the eye. There its involvement may resemble a mild form of uveitis. In such a comparison one may easily picture a number of exudates in labyrinthine fluid, like vitreous opacitites of the eye. There would be some disturbances of equilibrium and sounds would not be as readily transmitted to the tectorial membrane. Shambaugh explained a case of diplacusis and low tone deafness by the presence of exudates on the basilar membrane which weighted it down, thereby altering the response to sound waves. His case recovered after a tonsillectomy.

A recent scientific report on the use of ephedrine and nicotinic acid in animal experimentation brings out a timely observation. The experimenter observed that ephedrine reduces congestion in the labyrinth of the ear and that nicotinic acid increases this congestion. This sounds logical and would be found true in certain human beings. Whether it would be true in all is doubtful, but it is certainly worth keeping in mind. Nicotinic acid is very helpful in certain cases of dizziness and head noises but useless in others. Ephedrine should be tried when nicotinic acid fails.

Allergy is a cause of deafness. This might be manifested either in the eustachian tube, middle ear, the labyrinth or in all three areas. Ephedrine helps very materially in this condition.

I have observed two cases of partial deafness relieved by drainage of the gallbladder, and since that time other cases have been reported due to a high cholesterol content in the blood system. I saw one case relieved by the removal of an ovarian cyst. Two cases had partial deafness with voice sounds being had a relaxed soft palate that seemed to push forward too much and the tensor tympani muscle must have been relaxed. I used nux vomica and thiamine chloride while treating the nose and throat.

The vitamins have been widely used in the treatment of deafness, as well as for every disease of man or beast. In cases due to a deficiency, vitamins and minerals should be used for extended periods of time. Nicotinic acid has been mentioned before but I wish to emphasize this very useful vitamin which has a drug-like effect. Thiamine chloride along with nicotinic acid seems to make the nerve of hearing a little more acute.

A new mixture of vitamins and amino acids (called hyvanol in capsules, and amvitol in ampules) has been very favorably reported in a recent article. One hopes that "gun shot" prescription may prove half as effective as its authors report.

Hearing aids are not the answer to the otologist's problem. I have had two patients within the last year who went to two well-known clinics for a general examination with particular reference to anything that might be causing loss of hearing. Both returned home wearing hearing aids. One was the child with petit mal which no longer needs the aid. The other patient had a high cholesterol content of the blood which the well-known clinic did not discover. She has improved on gallbladder treatment and nicotinic acid and no longer needs her hearing aid. But where everything has been done that can be done and the hearing has not been brought up to a useful level the patient should certainly obtain a hearing aid. Theoretically the hard-of-hearing should wear a hearing device with as much reason as the people with eyestrain wear glasses. Most people past middle age are deficient in the high tones. And it may well be that most of these will some day wear hearing aids. Then with their bifocal glasses, their false teeth and their walking stick they will have become pretty well mechanized.

THE AMERICAN MEDICAL ASSOCIATION CENTENNIAL

A total of 15,667 physicians registered at the recent Centennial session of the American Medical Association held in Atlantic City in June. This record-breaking attendance establishes a new world record as the largest medical meeting ever held at any time or place.

Both the program of scientific papers presented and the exhibit of scientific work were conceded to be beyond parallel in any previous session, even of the A.M.A. itself.

The House of Delegates met almost continuously during the first four days of the session. Among the more important actions taken by the House was the adoption of a resolution discharging the Committee on National Emergency Medical Service and constituting this body as a Council of the Board of Trustees to be known as the Council on National Emergency Medical Service. The Delegates adopted a report of the Committee, summarizing conclusions drawn from the lessons of the first and second World wars with reference to the preparedness of the United States for proper medical service both for the armed forces and for the civilian population, in the event of another national emergency.

The new president of the A.M.A., Doctor Edward L. Bortz, presented a number of important recommendations which were all adopted. These include the establishment of a two-day scientific session specifically for general practitioners at the time of the semi-annual meeting of the House of Delegates which is usually held in December. In future, however, in accordance with another recommendation of Doctor Bortz, the semi-annual session will convene with a different geographical district each year, in order to serve the convenience of the general practitioner better in various parts of the country who will desire to attend the special two-day scientific session.

Another action of the House of Delegates looks toward a closer affiliation with the third and fourth year medical students, possibly through some type of affiliate membership and the reëstablishment of a student section in the *Journal A.M.A.* It is proposed also to encourage third and fourth year students to present scientific papers at state, county and even national levels, and the desirability of a student section in the scientific assembly of the A.M.A. is under consideration.

A related proposal adopted by the House of Delegates is that the Secretary of the Association prepare an attractive illustrated booklet describing the various activities of the A.M.A. and designed for distribution to the members of graduating medical classes.

The House of Delegates was preoccupied during much of its meeting with a further clarification of the public relations of the Association, especially in view of the resignation of Mr. Raymond Rich of New York as public relations consultant and Mr. Charles Swart as Executive Assistant in charge of public relations in the Chicago office. It was decided, among other things, to provide for more experienced representatives to serve as speakers for lay groups and legislative bodies and to establish a speakers' bureau to assist these representatives. It was also proposed to utilize more effectively the Women's Auxiliary of the A.M.A. and its constituent societies as an instrument in the field of public relations.

The House of Delegates received several resolutions regarding the nursing problem and established a special committee in this subject.

The Council on Medical Education and Hospitals adopted new standards for residencies and fellowships in the specialties. These standards are to appear in the proceedings of the House in the *Journal A.M.A.* and will also be reprinted and distributed.

The National Conference of County Medical Society Officers held its initial meeting in Atlantic City immediately prior to the meeting of the House of Delegates and it was unanimously voted to continue this conference as a feature of the annual session of the A.M.A. The fundamental purpose of these meetings is to develop a working relationship and partnership between the A.M.A. and every member physician.

Doctor Roscoe L. Sensenich of South Bend, Indiana, who has for several years served as Chairman of the Board of Trustees, was elected President-Elect of the American Medical Association to succeed Doctor Edward L. Bortz of Philadelphia. Doctor Thomas A. McGoldrick of Brooklyn was elected Vice-President and Doctors George F. Lull and Josiah J. Moore, both of Chicago, were reëlected Secretary and General Manager, and Treasurer, respectively. Doctor R. W. Fouts of Omaha was reëlected Speaker of the House and Doctor Francis F. Borzell of Philadelphia was also reelected Vice-Speaker. The House of Delegates selected Chicago as the 1948 Convention City. In 1949 the A.M.A. will return to Atlantic City and in 1950 the meeting will be held in San Francisco.

MISSISSIPPI HOSPITAL AND MEDICAL SERVICE

Richard C. Williams

The Mississippi Hospital and Medical Service, now being organized, is a non-profit, community sponsored organization, offering prepaid hospital and surgical care to the people of Mississippi. The principle of this new medical and hospital coverage will be identical with the Blue Cross Plans and Blue Shield Plans endorsed by the American Hospital Association and American Medical Association, respectively. Already, this organization has received approval from the Mississippi Hospital and Mississippi Medical Association, and the approval from the American Hospital Association and American Medical Association will be applied for in September.

Plans for developing this prepaid hospitalization and medical care program are very unique. Actual coverage will not begin until November 1, 1947, when the Mississippi Hospital and Medical Service will be incorporated. In the meantime, the hospitals throughout Mississippi will be contacted and presented with the program, in an effort to have them become affiliated and a member-hospital with this service organization. Affiliated hospitals will render the services outlined in the contracts and charge the Mississippi Hospital and Medical Service directly. Thereby, patients may be admitted to the hospital in lieu of a cash payment or other rules applicable to payment in the hospital and these patients will receive the services outlined in our contract on a service basis. The hospitals will then bill the patients only for those services not covered in the contract.

There are eighty-eight Blue Cross Plans in the United States, offering essentially this same type of service: room and board, general nursing care, operating room, laboratory service, routine medications and dressings, delivery room, basal metabolism tests, and 50 per cent coverage of oxygen therapy and x-ray; also, for accident cases, emergency room service. The Mississippi Hospital and Medical Service offers this coverage for the hospitalization on two different types of contracts. The Type A contract, which allows a credit of $6.00 per day towards the room and board, and costs one person 90c per month and $2.25 per month for an entire family. The Type B contract allows a credit of $4.00 per day towards the room and board at a charge of 60c per month for one person and $1.50 per month for the entire family.

Individuals as such may not join, as membership is based on employed groups. The smallest eligible group is five persons. In other words, where there are four other persons employed, all five may form a group to join this Plan. If there are more than five persons working, a scheduled percentage, depending upon the size of the group, must enroll. Organized farm groups may join through their organization. Medical examinations are not necessary.

Under the Blue Cross Hospitalization Program, there are over 27,000,000 men, women, and children covered throughout the United States, Puerto Rico, and Canada. By the end of 1946, many medical care plans were active and many more were in the process of organization. Over 5,000,000 men, women and children were being benefited by these plans. Forty-six of the medical-surgical plans are coördinated with fifty-one Blue Cross hospital service Plans.

One-fourth of the medical-surgical Plans operate under the corporate name and administrative structure of the coördinating Blue Cross Plan. Half of them are established on separate corporations but are served administratively by Blue Cross personnel. The remaining one-fourth are separate corporations with separate administrative staffs. The Mississippi Hospital and Medical Service will operate under the corporate name and administrative structure of the coördinating Blue Cross Plan.

The Associated Medical Care Plans are of two types: those providing service benefits, and those providing cash indemnity payments toward the cost of care. Under the former, participating physicians agree to accept the Plan's fee-schedule payment as full compensation for professional services rendered. Under the indemnity payment system, stipulated amounts are applied toward the physician's charges.

Ordinarily, service benefits are applicable only to participate in income groups below established limits which are based on total income and number of dependents. Under service benefit agreements, participants whose income is in excess of the established maximum may be charged an additional amount by the participating physician.

Medical-surgical affiliates to Blue Cross Plans which operate on an indemnity basis make no special arrangements for low income participants. Nonetheless, the fee-schedule allowance provided under indemnity plans are often adequate to meet professional charges made for low income groups. Indemnities may be paid directly to physicians, or to the subscriber.

Twenty-four medical-surgical Plans provide for indemnity payments and twenty offer service benefits. Fundamentally, the Blue Cross coördinated medical-surgical Plans are based on the provision of surgical care. However, twenty-nine Plans cover some kind of medical service when performed in hospitals. Based on experience, surgical Plans are more widely acceptable and more popular than medical Plans when offered in connection with hospital service benefits.

Mississippi Hospital and Medical Service offers its surgical care on a cash indemnity basis whereby there will be complete freedom, by the patient, as to choice of physician and the indemnity can be assigned to the physician as payment toward his bill.

The Type A surgical contract, which will be offered in conjunction with the Type A hospitalization contract,specifies $150.00 maximum benefits; and the Type B will allow $112.50 maximum benefits which will cover surgery, fractures, wounds, dislocations, and maternity. Payment will be made for services rendered in the doctor's office, patient's office, patient's home or the hospital. The additional cost for this coverage will be 60c per month for one person and $2.00 per month for the family (Type A) and 50c per month for one person and $1.50 per month for the family (Type B).

The proposed program for the Mississippi Hospital and Medical Service during September and October will be the conducting of a pledging campaign. Assistance is asked of every community-minded person during this pledging period, contacting employers interested in the program and calling group meetings at which a representative of the Mississippi Hospital and Medical Service can be present to completely explain the program. An enrollment fee of $1.00 per contract will be collected at these meetings. This enrollment fee will be placed in escrow until incorporated and then it will be set up as a reserve The goal of the pledging campaign is 30,000 subscribers.

In summing it up, non-profit operation offers maximum service at minimum cost and relieves financial worry over hospital and surgical bills, with the patient retaining complete freedom in choice of physician and hospital.

The Mississippi Doctor

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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WANTED: A NEW SERVICE

There is a great shortage of nurses in the United States. The nurses we have are fine as a rule, but trained more for administrative positions than patient service. The tendency in the nursing profession is to specialization as has been and is in medicine. This will continue of course. But we need many good practitioners in the field of medicine, many doctors who can give reasonable service to eighty per cent of the people, and some good everyday nurses who have the Florence Nightingale spirit, nurses who are kind and considerate of the patient and who can inspire the patient to fight for health and recovery. It is entirely in keeping with the order of social benefits and economical security that the state should pay the salaries of teachers for the nursing schools as it does for our high schools and colleges. Mississippi has the foundation laid to take the lead in this advanced service. It would be entirely fitting as has been suggested by some thinkers that we offer scholarships at once in hospital administration to young men. Our state urgently needs at least a hundred young men who have a vision of service and who possess administrative and business ability to take charge of our hospitals as we set up the new order.

The general community hospital is going to serve a great social and economical purpose in our human economy as it becomes the cornerstone in distributing the best in medicine to all the people.

§

The next meeting of the Northeast Mississippi Medical Society will be held at the University of Mississippi in October. Keep this in mind.

§

Blue Cross insurance is on its way to the people of Mississippi. It will do a good part in helping to solve our medical problems. When the subject is presented to you, give it an attentive ear.

§

The consumption of alcohol as a beverage is incompatible with the machine age in which we live. Its consumption is responsible for half the deaths and accidents on the highways, half the murders, half the divorces, half the suicides and half the venereal diseases. Its consumption brings slavery, not liberty.

COUNCIL APPROVES PLAN

On call of the chairman, Dr. W. H. Frizell, the Council of the Mississippi State Medical Association met at the Heidelberg Hotel in Jackson, at 10 a.m., July 18. Present were Dr. W. H. Frizell, Dr. W. H. Curry, Dr. T. E. Ross, Dr. B. B. O'Mara, and Dr. H. C. Ricks.

The Council met for the purpose of hearing an explanation of the Associated Medical Care Plans as endorsed by the American Medical Association and sponsored by the Mississippi State Hospital Building Commission.

Meeting with the Council were representatives of the State Hospital Association, the secretary of the State Medical Association, and representatives of the State Hospital Building Commission. After hearing the explanation of the plan and the discussion from the floor the Council met in executive session. Dr. Henry Boswell and Dr. Augustus Street were invited to meet with the Council as advisers. On motion of Dr. T.E.Ross,seconded by Dr. Curry, the Council voted unanimously to approve the plan for associated medical care.

On recommendation of Dr. Boswell and on motion by Dr. O'Mara, seconded by Dr. Curry, the Council recommended a temporary committee to serve as members of the board of directors for the associated medical care plan.

For the first time, the Mississippi Medical Association approved a state-wide Medical Care Plan which is to be offered to the public along with hospitalization coverage already approved by the Mississippi State Hospital Association.

These combined hospital and medical benefits will be offered through the Mississippi Hospital and Medical Service, which will be a non-profit, community sponsored organization for prepayment of medical care. This will include maximum surgical and maternity benefits at minimum costs.

Individuals as such may not join. Membership is based on employed groups. The smallest eligible group is five persons. In other words, if you work at a place where there are four other persons employed, all five of you may form a group to join this plan. If there are more than five persons working for your employer, a scaled percentage depending upon the size of the group, must sign up. Individual or family coverage will be offered to any group. It is also available to all members of the Mississippi Farm Bureau Federation, and to any other organized farm groups.

The principle of this new medical and hospital coverage will be identical with the Blue Cross Plans and Blue Shield Plans which are endorsed by the American Hospital Association and the American Medical Association, respectively. According to Mr. R. C. Williams, This committee was composed of the fllowing doctors to serve until the regular meeting of the State Medical Association: E. C. Parker, Gulfport; George Street, Vicksburg; R. B. Caldwell, Baldwyn; Paul Gamble, Greenville; T. E. Ross, Hattiesburg; J. K. Avent, Grenada; George Dicks, Natchez; J. G. Gardner, Columbia; J. D. Dyer, Houston; Lamar Arrington, Meridian; W. H. Frizell, Brookhaven; B. B. O'Mara, Biloxi.

The Council also voted to coöperate in sponsoring educational meetings with the various medical societies of the state concerning the plan.

The Emory University School of Medicine and the Georgia Department of Public Health are offering a postgraduate course of infectious diseases to be held in Atlanta on September 18-19. The tentative program follows:

Penicillin and streptomycin therapy: Indications, dosage, pharmacologic action, bacterial resistance.

Poliomyelitis: Transmission, diagnosis, management.

Tuberculosis: Use of streptomycin, B.C.G. vaccination, detection by photofluorography.

Rickettsial diseases: New methods of treatment, diagnosis and epidemiology.

Syphilis. Diagnosis, serologic interpretation, false positive reactions, penicillin therapy.

Gonorrhea: Management and complications.

Respiratory infections: Etiology, differentiation and treatment of colds, influenza, pneumonias.

Streptococcal infections: Relation to nephritis and rheumatic fever, scarlet fever.

HOMOCHITTO VALLEY SOCIETY

The former Homochitto Valley Medical Society was reactivated in Natchez Tuesday night, July 29. On invitation Councilor W. H. Frizell of the Eighth District met with the medical profession of the counties of Adams, Amite, Claiborne, Franklin, Jefferson and Wilkinson. After a delicious banquet was served in the Eola Hotel—as only Natchez doctors can arrange—the meeting was called to order by the enthusiastic president of the former organization, Dr. Will T. Harper of Fayette, who stated the purpose of the call and presented Councilor W. H. Frizell. Dr. Frizell explained the original purpose of the county unit organization in the earlier days of organized medicine, but showed how the advent of rapid cross-country travel, the concentration of doctors in urban areas, and the lack of sufficient physicians to care adequately for the rural areas, the county idea gave way to district medical societies, which are in fact component societies of the state organization. He showed the advisability of linking these sparsely occupied areas into one organization in which more effective work may be done and more satisfaction to the doctors.

FOR SALE:

X-ray and Sanborn Metabolic machines. Both are in A-1 order. The x-ray machine cost $3,000.00 with the necessary equipment. Prices on both machines extremely reasonable.

DR. W. T. PRIDE
1460 Madison Avenue,
Memphis 4, Tennessee

So with the sanction of the councilor they effected the organization with the election of officers for the remainder of this year in the Homochitto Valley Medical Society. The individual county societies were requested to surrender their charters and a new charter be issued to the new organization at the next annual meeting of the Mississippi State Medical Association.

Mr. Richard C. Williams was introduced to the audience and explained the Associated Medical Care Plan, its methods and workings. Then a round-table discussion was entered into followed by favorable consideration in giving the movement the group's endorsement.

The group adjourned to meet in Natchez the second Tuesday in September for further organization and a scientific program. Regular quarterly meetings in varied places in the area comprising six counties were announced.

PIKE MEDICAL SOCIETY MEETS

The Pike County Medical Society held its regular meeting at the Palm Room of the McColgan Hotel in McComb on Thursday evening, August 7, 1947.

During the short business session three new local physicians were voted into the society. They were Drs. Morris Phillips, Ira Lee Hewitt, and R. J. Barnett, all of McComb.

The guest speaker of the evening was Dr. C. Gordon Johnson, assistant professor of gynecology and obstetrics at Tulane University. Dr. Johnson's presentation of the subject, "Vaginitis—Diagnosis and Treatment," was well illustrated by both kodachrome and regular lantern slides.

Those present for the meeting included: Dr. C. Gordon Johnson of New Orleans, La.; Dr. F. S. Herrin, Summit, Miss.; Dr. W. O. Biggs, Osyka, Miss.; Drs. T. L. Moore, Jr., F. L. Butler, Gladys Ratcliff, B. J. Hewitt, W. C. Hart and Morris Phillips of McComb.

AMERICAN COLLEGE OF SURGEONS TO HOLD CLINICAL CONGRESS IN NEW YORK SEPT. 8-12

The thirty-third annual Clinical Congress of the American College of Surgeons, including the twenty-sixth annual Hospital Standardization Conference, will be held at the Waldorf-Astoria, New York, from September 8 to 12. The five-day program features operative and nonoperative clinics in thirty-eight hospitals in New York and Brooklyn, and scientific sessions in general surgery and the surgical specialties, official meetings, hospital conferences, medical motion pictures, and educational and technical exhibits, at the headquarters hotel. Dr. Howard A. Patterson of New York is chairman of the Committee on Arrangements; Dr. Frank Glenn is secretary. Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell, Chicago, the associate directors, are in general charge.

POSTGRADUATE COURSE IN INFECTIOUS DISEASES

The Emory University School of Medicine announces a postgraduate course in infectious diseases to be conducted in coöperation with the Georgia Department of Public Health. It will be held September 18-19 at the Grady Hospital, Atlanta, Ga.

This course is planned specifically for the public health physician and general practitioner. It is intended to be a practical and comprehensive study of the latest methods of clinical and laboratory diagnosis and treatment of communicable diseases, including venereal infections.

SECOND ANNUAL POSTGRADUATE COURSE IN DISEASES OF THE CHEST

The American College of Chest Physicians is sponsoring a second annual postgraduate course in diseases of the chest to be held during the week of September 15-20, 1947, at the Municipal Tuberculosis Sanitarium, Chicago, Illinois.

Information may be secured at the office of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

MEETING

The Officers and Fellows of the Southern Psychiatric Association announce that their annual meeting will be held in Birmingham, Alabama, on October 13 and 14, 1947.

ANNOUNCEMENT

John L. Shaw, M.D., announces the removal of his office and the formation of the Turley-Shaw Clinic, with John L. Shaw, M.D., and Robert E. Lawson, M.D., associated in medicine and surgery. Baptist Hospital Annex, 899 Madison Avenue, Memphis, Tennessee. Practice limited to urology and urological surgery.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology, February, 1947; V. 55, No. 2.

SIMULATING SERUM-SICKNESS REACTION TO PENICILLIN. William E. Sullens, Jr. U.S. Navy M. Bull. 45:752 (Oct.) 1945.

The author reports that penicillin produced an allergic reaction which simulated serum sickness. The symptoms consisted of giant urticarial lesions on the abdomen, the back and the hips, arthralgia of the wrists and the ankles, moderate edema of the feet and hands, a temperature of 99° F., headache and moderate general lymphadenopathy occurring six days after a second course of penicillin treatment.

Intradermal tests with a 1:10 solution and a 1:100 solution of calcium penicillin in isotonic solution of sodium chloride produced no reactions at the sites of injections; however, multiple small areas of urticaria appeared above these areas five hours later. The author was unable to determine whether the reaction was due to penicillin or to an impurity of the product.

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REHABILITATION OF PATIENTS SUFFERING FROM SKIN DISEASE. R. Mason Bolam, Brit. M. J. 2:539 (October 20), 1945.

In 1943, seventy beds were allocated for the rehabilitation of patients in dermatologic cases among military personnel. During two years 800 men have been admitted; 584 of these have been returned to duty and 216 have been discharged from the service.

Patients with many types of cutaneous disease apart from those of a chronic widespread, intractable nature will benefit from rehabilitation, and much can be done by showing the patient how to live with his disease and how to apply his treatment correctly.

The psychiatric aspects of these patients deserve detailed study since a considerable number are poorly adjusted, displaying anxiety to a varying degree, whereas others have a pronounced self-centered disposition. During the period of convalescence the utmost tact and sympathy are necessary in handling special cases in which it must be decided whether a man may resume his former occupation or should engage in work along new lines. Facilities provided include woodwork, leatherwork or needlework, entertainment, a library, educational courses, lectures and the opportunity to work on the grounds and the farms in the neighborhood.

Types of cutaneous diseases which benefit from rehabilitation of the patients are: 1) dermatitis seborrheica, 2) eczema, 3) impetigo, 4) pyodermatitis, 5) furunculosis, 6) dermatitis due to a sulfonamide compound and 7) lichen planus.

In treating dermatitis seborrheica of the trunk and the extremities, the authors have found the following prescription far superior to the more popular sulfursalicylic acid ointment:

Solution of coal tar N.F.; Prepared calamine N.F.; Zinc oxide; Peanut oil; Petrolatum to make 1 ounce (30 cc.), 1 drachm (3.88 Gm. or Cc. of each.

An interesting observation is the fact that men recovering from dermatitis due to a sulfonamide compound are unable to wear khaki clothing, necessitating testing of the skin with uniform material before they are returned to the service. The author recommends that rehabilitation of patients with cutaneous disease should be introduced for the civil population.

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MELANOTIC NEVUS OF THE CHEEK; APPARENTLY UNDERGOING MALIGNANT DEGENERATION, DUE TO A LARGE UNDERLYING FOREIGN BODY GRANULOMA WHICH HAS DEVELOPED AROUND BONE FORMATION. L. M. Pautrier, Dermatologica, 88: 110 (August) 1943.

A forty-four-year-old woman had had since infancy three pigmented nevi of the right cheek. During eight weeks the largest of the lesions became tender, elevated and infiltrated. A diagnosis of nevus-epithelioma was made. All nevi were removed with the electric cutting current. The changes observed histologically were those of the nevus, without signs of malignant changes, and of an enormous foreign body granuloma which had developed in the deep part of the corium and subcutis around some osseous formation. A rudimentary sebaceous cyst might have caused the metatypic bony growth. The author feels that the constant irritation beneath the nevus would sooner or later have caused malignant degeneration of the nevus.

PEDIATRICS

THE BALTIMORE RH TYPING LABORATORY: A NEW COMMUNITY HEALTH SERVICE—Milton S. Sacks, Elsa F. Jahn and William J. Kuhns, The Baltimore Rh Typing Laboratory, a privately sponsored coöperative community venture. The services of the laboratory are available to private and clinic patients at a moderate fee. Rh study as a routine part of prenatal care has been performed on 7000 women since the establishment of the laboratory, less than a year ago.

Rh typing is done with a potent human antiserum of Rh^1_0 (Rh_1) specificity. Blood samples giving negative or doubtful reactions are further tested with three other antiserums, including those of Rh^1 and Rh^{11} specificity. The serums of all patients with Rh-negative blood are then tested for antibody content, using the blocking test, the conglutination test and the Diamond slide test. If a positive reaction is obtained with any of these, titration of the antibody is attempted with the conglutination technic of Wiener, and a 2 per cent suspension of Rh positive cells in isotonic sodium chloride.

Husbands of all Rh-negative women are requested to come to the laboratory for typing. Women whose husbands are Rh-negative are not tested further. Husbands who are Rh-positive and of subgroup Rh'_0 (Rh_1) or Rh' are Hr typed to determine whether homozygous or heterozygous.

All Rh-negative women whose husbands are Rh-positive, are followed at monthly intervals throughout the first and second trimesters of pregnancy and at closer intervals in the third trimester. Postpartum, all patients are studied at ten days and six weeks as a final check for the presence of antibodies.

"Among by-products of the operation of the laboratory are: (1) maintenance of a continuous supply of potent serum by donations from Rh-sensitized women whose serums contain antibodies; (2) accumulation of a large list, available to all hospitals in the city, of Rh-negative men of all blood groups who are willing to serve as donors in an emergency; (3) application of Rh tests in medicolegal problems which involve disputed paternity.

"To date, the proportions of Rh-positive and Rh-negative persons conform closely to previous established figures. Of 904 Rh-negative pregnant women, forty-six, or 5.08 per cent displayed evidence of sensitization. Detailed studies of this group are now in progress. It is obvious that knowledge of the existence of sensitization in a particular patient will be of value in the prevention of intragroup hemolytic transfusion reactions. Future sensitization of intragroup hemolytic transfusion reactions. Future sensitization of Rh-negative women by transfusions of Rh-positive blood should also be prevented.

"Current methods for the prevention and management of hemolytic disease of the newborn are admittedly not satisfactory. The detection and availability of a fairly large group of sensitized patients will permit the application and study of new technics for the better handling of this important clinical entity."

COMMENT

It is our opinion that this is a very timely article since there has been and is now being so much said about the effects of the Rh factor. This article at this time certainly should attract a great deal of attention from the medical profession all over the country. It is well known that mistakes are easily made in properly interpreting Rh factors in individuals. First, it is essential that the technician shall have had good training and experience in making this examination; and second, the material for making the examination must be just right in order for it to be properly interpreted. The value of a correct interpretation is obvious since it is well known that a human life can easily be saved or lost by errors in regard to the Rh factor.

State Board of Health

Felix J. Underwood, M. D.

PREVENTABLE DISEASE CONTROL

1945-1947

By A. L. GRAY, M.D., Director

The Division of Preventable Disease Control consists of four units or sections. These units are acute communicable diseases, tuberculosis control, venereal disease control, and cancer control. Functions of the Division are to collect data on the prevalence of diseases and evaluate the relative importance of each disease; to promote and supervise programs of control directed at each disease which can in a measure be controlled; to assist county health departments in conducting programs of control; to make epidemiological studies of special disease problems as they arise and to work toward solution of these problems through physicians and county health departments; and to assist private physicians and hospitals in the control of diseases subject to control.

Prevalence of Communicable Diseases:

Except for an epidemic of poliomyelitis in 1946 and upsurge of diphtheria in 1945, the incidence of communicable diseases in the state was in general favorable compared to previous years. Poliomyelitis was unusually prevalent in 1946 with 342 known cases reported. This was the highest number of cases since 1937 and was a part of a nation-wide increase. In 1945 the number of cases of diphtheria climbed to 744 but dropped back to 442 in 1946. All over the nation in 1945 there was an unusual prevalence of this disease.

Undulant fever climbed to a new high in prevalence in the biennium showing 100 cases in 1945 and 133 cases in 1946 compared to a previous high of forty-five cases in 1944. Typhus fever reached a total of 235 cases in 1945 but declined to 121 in 1946 probably as a result of active control in certain areas. Ophthalmia neonatorum was reported in only thirty-two instances in 1944 and forty-eight in 1945. These figures are much below previous years' totals and probably reflect the result of good prenatal and infant care, intensive gonorrhea control, and effective therapeutic agents for gonorrhea. The year 1946 showed the smallest number of smallpox cases in the history of the state with only nine cases being reported. Typhoid fever was at a new low in 1945 with 100 cases and ninety-five cases in 1946. This is a continuation of a marked yearly decline noted for the past twenty-five years and denotes the death knell of this disease within a few more years.

Special Studies:

Investigations were done on problems of special and increasing concern in communicable disease control primarily by the epidemiologist of the Division in coöperation with county health departments, private physicians, the United States Public Health Service, and other groups.

Undulant Fever: This disease seems to be increasing in the state as indicated by the fact that prior to and including the year 1944 there had been no more than forty-five cases reported in one year while in 1945 the number of cases climbed to 100 and in 1946 to 133. There had been a gradual increase from 1931 to 1944 and then a sudden marked increase in 1945 and 1946. An effort was made to study all known and suspected cases in the state by the epidemiologist to determine accuracy of diagnosis and source and mode of infection. In this study the attending physicians were contacted, all the cases interviewed, and blood specimens collected for study.

This study revealed the following as to probable sources of infection of the cases reported in 1946.

Probable Source	*No. Cases*	*Pct.*
Raw Milk	64	47.8
Raw dairy products	2	1.5
Unknown, probably raw milk	11	8.2
Raw milk and/or contact with infected animals	47	35.1
contact with infected animals only	4	3.0
Unknown	6	4.5
Total	134	

TABLE I

Cases and Case Rates of Reportable Diseases by Race and Total Per 100,000 Population in Mississippi for the years 1945 and 1946

	Cases			Case Rates		
Diseases	**W**	**C**	**T**	**W**	**C**	**T**
Acute Poliomyelitis	57	23	80	5.6	2.3	4.0
Amoebic Dysentery	897	346	1,243	88.4	35.5	62.5
Bacillary Dysentery	6,121	3,835	9,956	60.1	393.3	500.3
Cancer	1,599	928	2,527	157.5	95.2	127.0
Dengue	0	10	10	0.0	1.0	0.5
Diphtheria	532	212	744	52.4	21.7	37.4
Gonorrhea	8,338	17,285	25,623	821.5	1,772.6	1,287.5
Hookworm	4,657	600	5,257	458.8	61.5	264.2
Influenza	41,607	23,583	65,190	4,099.5	2,418.4	3,275.8
Lymphogranuloma Inguinale	46	150	196	4.5	15.4	9.8
Malaria	10,915	7,945	18,860	1,075.4	814.8	947.7
Measles	6,355	5,662	12,017	626.1	580.6	603.8
Meningococcus Meningitis	73	62	135	7.2	6.4	6.8
Ophthalmia Neonatorum	3	45	48	0.3	4.6	2.4
Pellagra	1,048	1,029	2,077	103.2	105.5	104.4
Lobar Pneumonia	4,629	2,658	7,287	456.1	272.6	366.2
Broncho Pneumonia	4,849	3,278	8,127	477.8	336.2	408.4
Puerperal Septicemia	69	117	185	6.7	12.0	9.3
Pulmonary Tuberculosis	824	761	1,585	81.2	78.0	79.6
Scarlet Fever	997	48	1,045	98.2	4.9	52.5
Smallpox	9	16	25	0.9	1.6	1.2
Syphilis	2,074	10,677	12,851	204.5	1,095.0	645.5
Trachoma	28	28	56	2.8	2.9	2.8
Tularemia	25	34	59	2.5	3.5	3.0
Typhoid Fever	57	43	100	5.6	4.4	5.0
Typhus Fever	214	21	235	31.1	2.2	11.8
Undulant Fever	90	10	100	8.9	1.0	5.0
Whooping Cough	4,474	2,833	7,307	440.8	290.5	367.2

TABLE II

Acute Poliomyelitis	287	55	342	24.5	4.9	14.9
Amoebic Dysentery	1,086	318	1,404	92.8	28.2	61.2
Bacillary Dysentery	4,495	2,752	3,368	384.1	244.5	315.7
Cancer	2,110	1,258	3,968	180.3	111.8	146.7
Dengue	1	0	1	0.08	0.0	0.04
Diphtheria	268	174	442	22.9	15.4	19.2
Gonorrhea	8,908	22,081	30,989	761.3	1,961.9	1,349.9
Hookworm	4,378	738	5,116	374.1	65.6	222.8
Influenza	41,309	22,983	64,292	3,530.3	2,042.0	2,800.6
Lymphogranuloma Inguinal	38	165	203	3.2	14.6	8.8
Malaria	10,681	7,083	17,761	912.8	629.3	773.8
Measles	13,191	6,257	19,448	1,127.3	555.9	847.2
Meningococcus Meningitis	55	43	98	4.7	3.8	4.3
Ophthalmia Neonatorum	1	31	32	0.08	2.8	1.4
Pellagra	986	1,105	2,091	84.3	98.2	91.1
Lobar Pneumonia	4,620	2,703	7,323	394.8	240.2	319.0
Broncho Pneumonia	5,549	3,891	9.440	474.2	234.7	411.2
Puerperal Septicemia	78	143	221	6.7	12.7	9.6
Pulmonary Tuberculosis	1,172	976	2,148	100.2	86.7	93.6
Scarlet Fever	491	14	505	42.0	1.2	22.0
Smallpox	7	2	9	0.6	0.2	0.4
Syphilis	2,093	11,552	13,645	180.0	1,030.0	594.3
Trachoma	47	40	87	4.6	3.6	3.8
Tularemia	28	43	71	2.4	3.8	3.1
Typhoid Fever	65	30	95	5.6	2.7	4.1
Typhus Fever	110	11	121	9.4	1.0	5.3
Undulant Fever	117	16	133	10.0	1.4	5.8
Whooping Cough	4,408	2,891	7,299	376.7	256.9	318.0

people of the state. It will continue to be a problem so long as there is general lack of interest of the public in this hazard and so long as dog owners show more affection for dogs than for children. In many areas of the state the over-ambitious fox enthusiasts have promoted and protected excessive fox population thereby leading to rabies in foxes which attack man and livestock in their craze of rabidness.

These situations have made it necessary to issue rabies quarantine orders in sixteen counties. In five of these counties quarantine was required on two different occasions and in one county three. A total of twenty-three quarantine orders was issued.

Plasma Distribution:

In February, 1946, the American Red Cross began making blood plasma available through the State Board of Health to the people of the state. This is one of the valuable fractions of whole blood collected during the war for the fighting forces. It is quite valuable as a substitute for whole blood where transfusion is needed and in many conditions causing loss of body fluids and electrolytes. When properly used it can save many lives and cut short many cases of severe illness.

This product is distributed by the State Board of Health through county health departments to hospitals and physicians as required. No charge is to be made by the doctors or hospitals for the product itself but for its administration only.

In the period February 14, 1946, through April 30, 1947, a total of 9,424 units of this product was distributed and an ample supply is on hand for approximately one year.

Distribution of Biologics:

One of the functions of the Division has been the purchase and distribution of products used in immunizing the individual against certain diseases. The quantities of these products distributed are shown below.

Product	**Amt. Dist.**		
	1945	1946	Jan. 1 to April 30, 1947
Smallpox points	1,770	3,420	5,880
Diphtheria Toxoid, cu. cen.	3,640	2,490	7,380
Whooping cough vaccine, cu. cent.	66,424	43,744	16,544
Whooping cough vaccine and diphtheria toxoid combined, cu. cent.	4,992	33,272	15,104

(to be continued)

1080 POISONING

Compound 1080 exerts its action on the myocardium and central nervous system in primates and presumably in man. The effect on the heart is the primary cause of death. It is first manifested by pulsus alternous. This is evidenced by alternation of heart valves, alternation in phase of contraction leading to a 50 per cent pulse deficiency and alternation in the electrocardiogram. Later premature systoles appear and death evidently results from by apileptiform convulsions.

Central nervous system reaction is manifest by eplieptiform convulsions.

In the event of 1080 poisoning the patient should be put at complete rest.

FIRST AID

Cause vomiting by sticking a finger in the throat and give a dose of magnesium sulfate or other cathartic as a purge. **Call a physician immediately.**

FOR THE PHYSICIAN

Any evidence of central nervous system excitation should be controlled by the judicious use of barbiturates of medium duration such as sodium amytal. The intravenous route of administration should be employed if necessary. The cardiac symptoms should be carefully followed, preferably by the electrocardiogram. Evidence of arrhythmia or marked changes in the phase of the T-wave is of great prognostic significance.

Aside from complete rest and adequate sedation to allay apprehension, there is little that can be done to prevent the progression of cardiac symptoms. Should ventricular fibrillation occur, the heroic procedure of intracardiac injection of 5 cc. of a 1 per cent solution of procaine hydrochloride might be attempted to restore the organized heart beat.

Symptoms of 1080 intoxication will usually subside within twelve to twenty-four hours. However, if the patient gives evidence of any sign of action on the myocardium, he should be kept at complete bed rest for a period of three days.

There is no danger of absorbing 1080 through the unbroken skin and probably not great danger of inhaling dangerous amounts when working with the powder. The main danger will come from the ingestion of this compound. It is water soluble and therefore possibility of the contamination of drinking water must be held in mind.

Dogs are more susceptible to 1080 poisoning than any other animal. **Keep bait poisoned with 1080 out of reach of dogs. Keep rodents that have been killed by 1080 out of reach of dogs.**

This summary emphasizes the danger involved in consuming unpasteurized dairy products. Further indication of this danger is the fact that of 24,000 cattle tested in 1943-1945 by the State Hygienic Laboratory, 5.53 per cent were Bang's reactors and of 43,900 cattle tested in 1946 by the Bureau of Animal Industry in Mississippi, 4.12 per cent were positive. The percentage of Bang's reacting cattle has been steadily climbing in the state.

In 1945-1946 four cities had undulant fever outbreaks all of which were traced to raw milk from infected herds.

Murine Typhus Fever: This disease gradually increased in prevalence from one case in 1933 to fifty-nine cases in 1942. The cases by years from 1943 to 1946 inclusive are shown below.

Year	No. Cases
1943	132
1944	178
1945	235
1946	127

The decrease in 1946 was in large measure due to active rat and flea control program in certain areas where most of the cases were occurring. The cases in 1945 were in thirty-eight counties scattered over the entire state. In the early history of the disease in the state practically all the cases were spread in the southern half of the state, but in recent years it has become wide-spread over the entire state.

All cases and suspects in 1946 were studied by the epidemiologist to determine sources of infection and determine need for community control activities. Until recently it was thought to be primarily a disease of urban communities, but in the past two years increasing numbers of cases occurred in rural dwellers. The study also demonstrated the cases as usually being associated with business houses and homes with heavy rat and flea infestation. These investigations have caused many communities to carry on rat and flea control programs and most of the reduction in cases in 1946 over 1945 can be attributed to control activities in these communities of previously high incidence.

Malaria: There is evidence that this disease is no longer a very serious problem in Mississippi. There has been a steady decline in malaria deaths and reported cases for many years. It was thought that veterans returning from war areas of heavy malaria incidence might create a serious problem in starting a new wave of malaria. So far there has been no evidence of this. A study was made of 950 veterans returned from malarious war areas and while 10 to 20 per cent of them gave history of malaria in service, only 0.3 per cent showed parasites in their blood. Most of those contacted were taking antimalarial drugs sufficiently constantly to keep their infectiousness at a low level.

Of 14,011 malaria slides examined in the State Hygienic Laboratory in 1946 only 205 were positive and a large majority of these were in males of military age presumably in men who had been at war. Several physicians have indicated that practically all the malaria they see is in returned veterans.

The annual malaria blood survey around reservoirs in north Mississippi which has been conducted for several years was again done in 1946 to determine the effect of the impounded water on malaria in residents near these reservoirs. The year 1946 was the first year in which not a single positive slide was found, indicating effective control by the United States Engineers. The survey was not done in 1945 because of lack of personnel.

Measles Prevention and Modification:

This ever present disease is now subject to some degree of control particularly with reference to its severity and cause of death. Practically 100 per cent of the population has it at some time in the life span, usually in the very early years. When it occurs in the first three years of life with the usual severity, it is particularly dangerous, accounting for a larger toll of deaths among this age group than any other.

A new product is quite effective in either temporarily preventing the disease, thereby postponing it until later in life when the danger of death is markedly decreased, or in making it quite mild. This preventive agent is a fraction of pooled whole blood from the adult population which has had measles and is known as immune globulin. The total amount distributed for the entire period March 1, 1945, to April 30, 1947, was 38,763 cubic centimeters. This is roughly enough of the product to prevent or modify the disease in 19,000 children.

Rabies:

This disease continues to be a hazard to the life and economic welfare of the people of Mississippi. It is spread to human beings by rabid dogs, wild foxes, and cats. Livestock are frequent victims of these rabid animals, thereby causing great economic loss to the

Woman's Auxiliary

FROM OUR PRESIDENT

I wish every doctor's wife in Mississippi could have been with me in Atlantic City, to enjoy the worship service Sunday morning, the beautiful tea Sunday afternoon in the Hadden Hall Garden Room, where the Woman's Auxiliary to the New Jersey Medical Society was hostess, honoring Mrs. Jessie D. Hamer, national president, and Mrs. Eustace A. Allen, president-elect.

I wish you had been with me Monday morning while I was milling around through that sea of scientific exhibits in the largest auditorium in the world, and Miss Lois Miller came within a few feet of where I was standing and sat down to the console of the largest organ in the world. So talented was she that she played and sang our national anthem for the formal opening of the exhibits. The thrill of it is unexplainable.

I wish you could have been with me Tuesday morning for the formal opening af the twenty-fourth annual meeting of the Woman's Auxiliary to the American Medical Association with Mrs. Jessie D. Hamer presiding.

The usual course of procedure was followed —invocation, pledge of loyalty to the organization, address of welcome, response, presentation of convention chairman, introductions, roll call, rules of order, president's address and reports of officers.

The reports were most inspiring, especially the state presidents' reports. Our own Mrs. Hill's report was outstanding. Our number was not as large as some of the others, but in comparison to population I'm sure we are not far from the top. I was a little envious of the states that reported every doctor's wife a member of the auxiliary or every county in the state organized.

Every business session was most interesting and inspiring.

The luncheons were an important part of the convention. The one Tuesday was in honor of the past presidents of the Woman's Auxiliary to the American Medical Association. Miss Petry was the speaker. She is with the U. S. Public Health Service, and spoke on nurse recruitment, which is our newest project. Among other things, she said that there are over 3000 hospital beds closed because of the shortage of nurses.

The luncheon Wednesday honored Mrs. Jessie D. Hamer, president, and Mrs. Eustace A. Allen. The guest speakers were Dr. H. H. Shoulders, president; Dr. E. L. Boutz, president-elect, and several other doctors from the American Medical Association.

I wish you could have been with me Thursday to view the more than 1400 paintings done by doctors. The most outstanding to me was the original, "The Doctor," from which was copied the postage stamp commemorating the centennial of the American Medical Association. When you buy postage stamps be sure to call for "The Doctor."

This was the ninth annual exhibition of the American Physician's Art Association.

I wish you could have been with me Monday night when sixty-five foreign doctors marched onto that enormous platform, invited guests of the American Medical Association, to be a part of an organization that means so much to the people of the world as the medical profession, is a rare privilege. Tuesday night those foreign doctors and many of their wives along with many of our outstanding doctors and their wives formed the receiving line at the reception. The honor and privilege of shaking hands with them took more than an hour.

I also wish you could have been with me to promenade up and down the famous Boardwalk and ride in a rickshaw.

Atlantic City truly is a convention city with its many famous hotels, the largest auditorium in the world, seating 45,000, and its many smart shops.

Mrs. S. B. McIlwain

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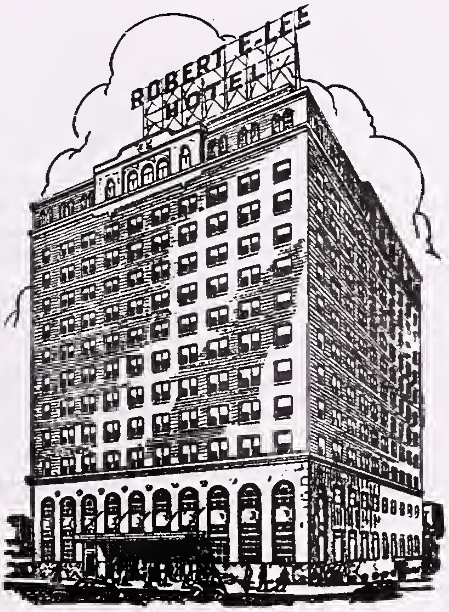

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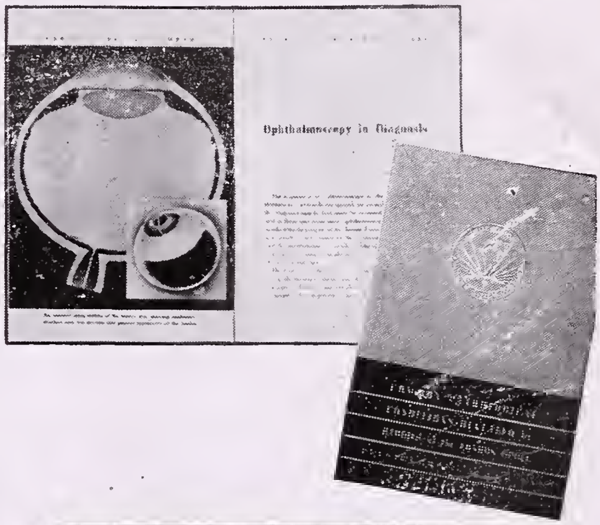

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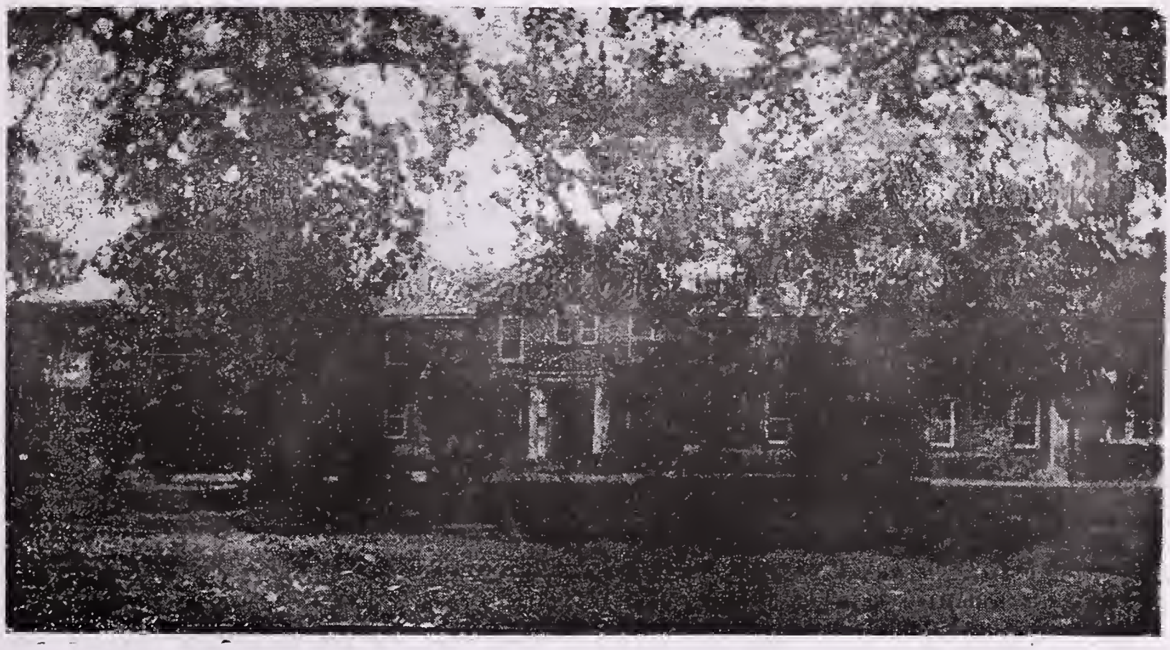

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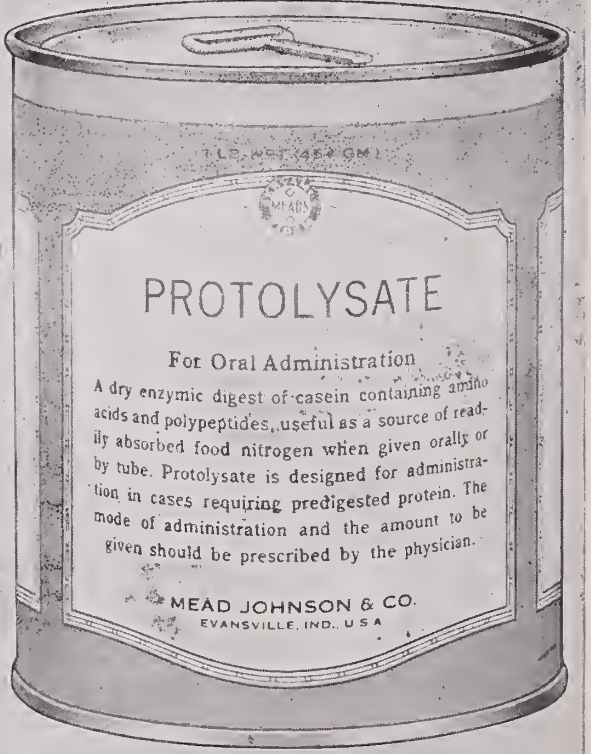
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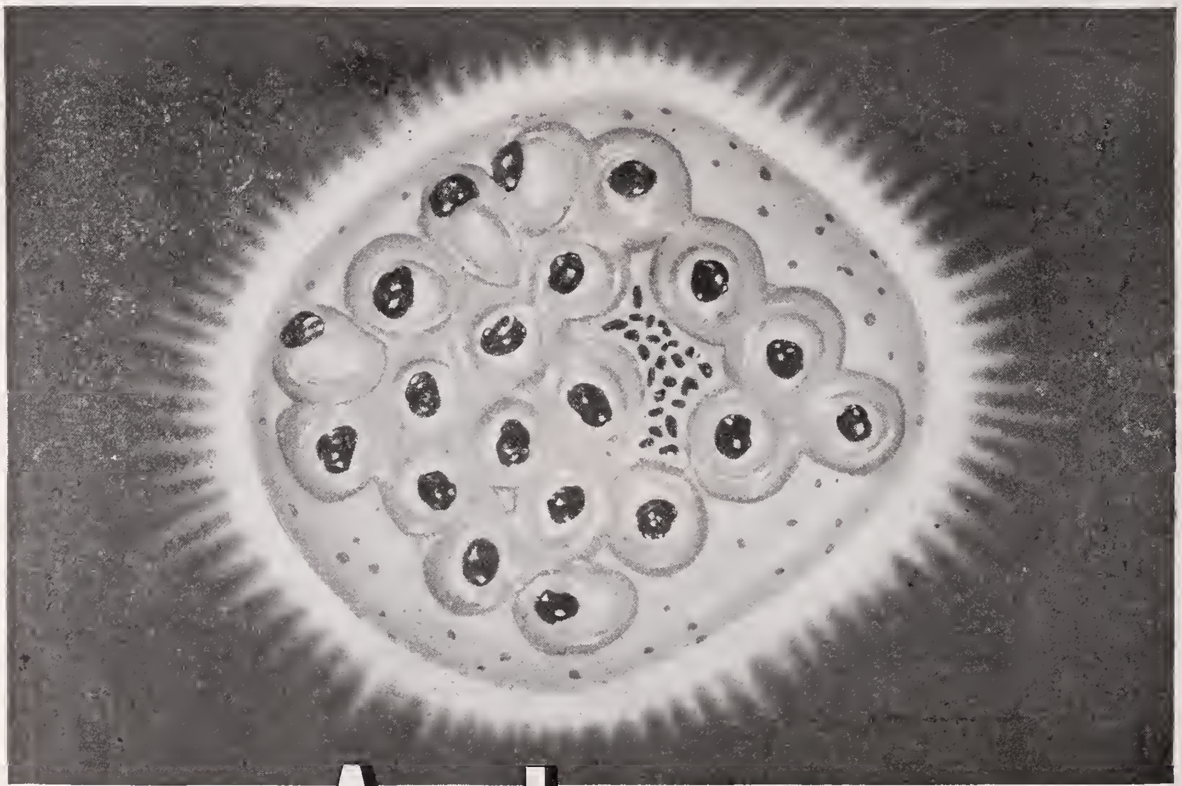

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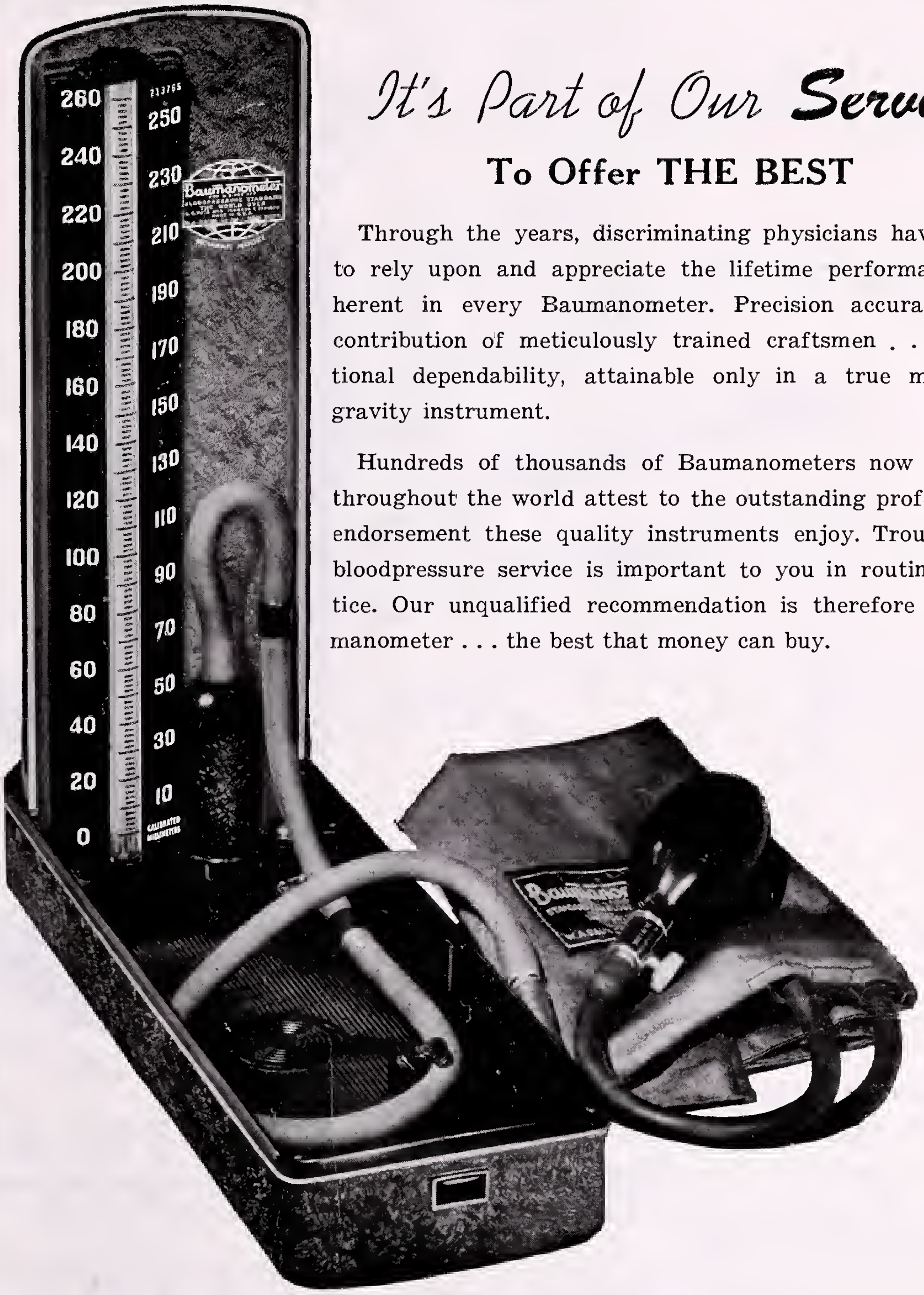

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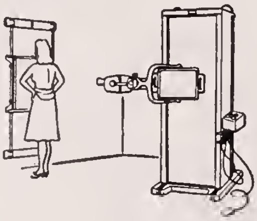

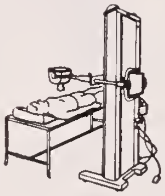

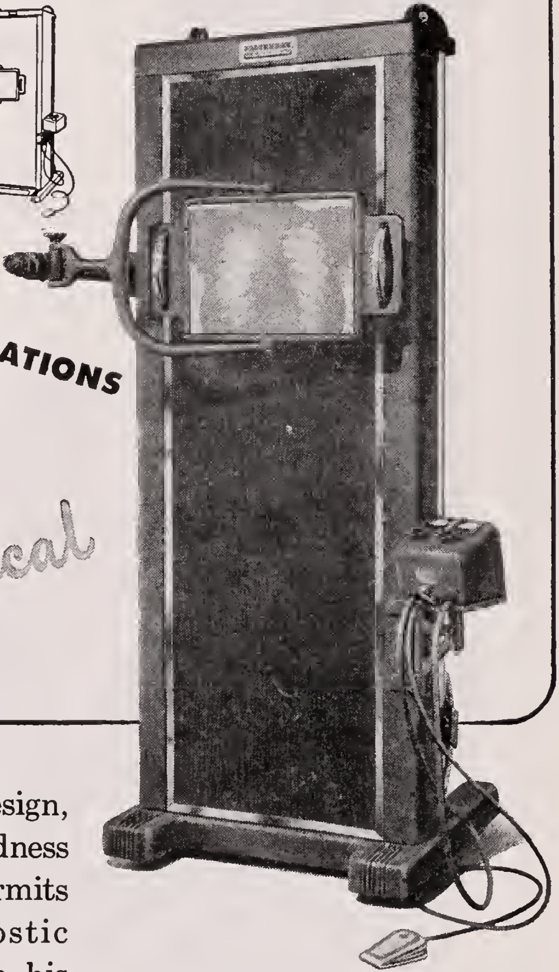

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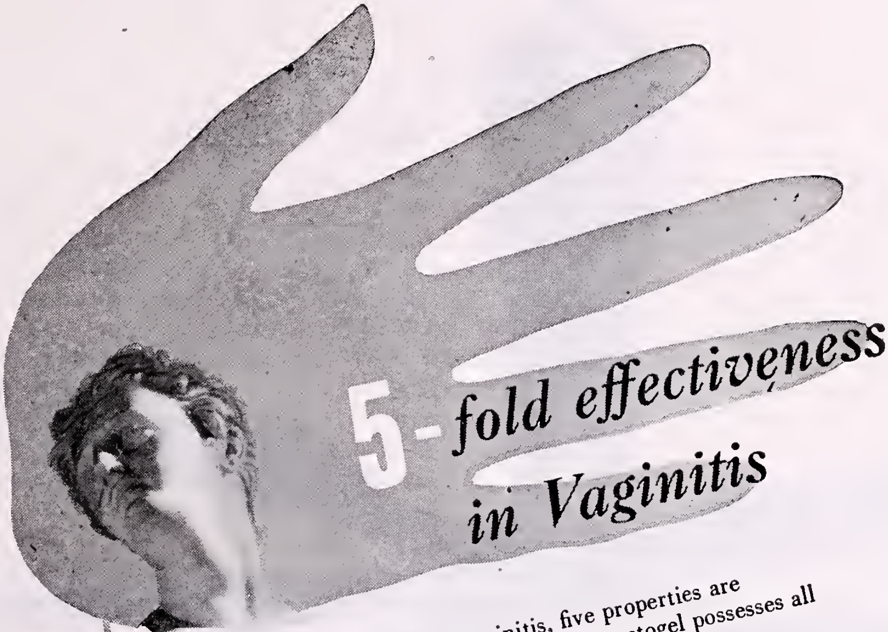

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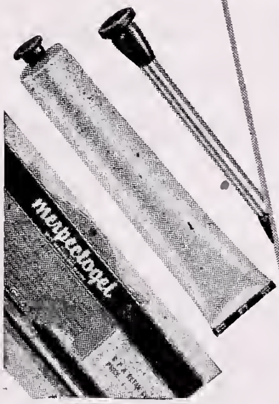

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The Present Status of the Surgical Treatment of Carcinoma of the Lung*

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THIRTEEN YEARS have now elapsed since the first total pneumonectomy was performed in the Johns Hopkins Hospital. Previous to that time a diagnosis for pulmonary malignancy was made infrequently and more for academic than practical reasons. Prior to this time no therapeutic measures or methods were available which offered the patient more than palliation. Medicinal and radiation therapy were then, as now, equally ineffective and the disease when so treated was, as is, always fatal.

The surgical treatment of malignant tumors of the lung has been a boon to patients and a lively stimulus to clinicians interested in pulmonary lesions. Because of this increased interest on the part of physicians the diagnosis of tumors of the lung is made much more frequently than in the past with the result that a greater number of patients is being referred for operation. In a medical center in which a special interest in this type of surgery has been manifested, what seems a disproportionate increase in the frequency of these cases is apt to occur, but it may probably be true that the incidence of primary pulmonary cancer is on the increase.

It is the purpose of this report to record the clinical analysis, preoperative preparation, operative procedure, immediate and remote post-operative results in a series of 327 consecutive cases of carcinoma of the lung which have been referred for surgical treatment, not accounting for those instances in which the patient was obviously inoperable from the standpoint of the clinical findings.

Clinical Analysis

Etiology. Although the etiological factors involved in the production of cancer are unknown, there is enough data accumulated to draw some conclusion as to the influence of certain factors to which human beings are exposed. In this and other series of cases reported one fact has been outstanding as probably playing a definite role in the production of pulmonary carcinoma, that is the great majority of patients afflicted with this malady are residents of urban districts. In such districts, from the cradle to the grave, the lungs are constantly exposed to many irritating substances, such as dust, dirt, various fumes, gases and other atmospheric pollutions which have a deleterious effect on the lining cells of the bronchial tree throughout its entire extent. It is a well-known fact that miners and particularly in various places in the world, laborers, exposed to certain foreign particles in the air, are very prone to develop growths in the lung. It is also fully recognized that individuals who are working in contact with irritating gases such as chlorine and others, frequently develop epithelial growths in the air passages. Changes in oxygen tension will affect the type of epithelial lining cells, often causing a metaplasia from the cylindrical cells to a flat cell. This morphological transposition may also be found in the bronchi which are tributaries to areas of infection such as lung abscess or bronchiectasis. In other words, chronic irritation, regardless of the type, will produce changes in the growth rate and shape of the cells of the lung which seems to be very sensitive to this pollution of the atmosphere. It will be interesting, now that women are smoking, to see if the much higher ratio of the malignancy of the lung in men, is decreased by an increase in the incidence in women.

Due to the occupational hazards mentioned above as well as habits, a higher incidence of primary malignant tumors of the lung is expected in the male than in the female. Table 1 shows the distribution according to sex of the patients in this series. It is to be noted that there is a much higher incidence in the male than in the female, a ratio of almost six to one in favor of the males. The incidence of involvement of the right and left sides is approximately the same.

In regard to the age incidence of primary malignant tumors of the lung, this does not vary to any great extent from the age incidence of malignant growths elsewhere in the body. The majority of the patients were in the fourth to sixth decades. Perhaps patients in the second to fourth decades were more frequently affected than would be the case of other viscera; however, this series of cases, although relatively large, is far too small to warrant an exact statement. Twelve of the cases fall into the sixth decade. The oldest patient in this series to be operated on was seventy-six years of age and the youngest nineteen. Age, in itself, seems to offer no contraindication to operation. Not infrequently an older patient from a physiological point of view is a far better operative risk than a younger one. In this series the older patients were surprisingly unaffected by the operative procedure, including the patient aged seventy-six, and generally had uneventful postoperative convalescences. Pulmonary cancer, however, generally speaking is a disease of advanced age.

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*Read before the Section on Surgery at the annual meeting of the Mississippi State Medical Association, Biloxi, Miss., May 7-9, 1947.

Unfortunately for the lay public, physicians as a whole, because of the lack of therapeutic measures to combat such lesions or to treat them effectively, have been less acutely interested in the possibility of malignant growths of the lung than those of other viscera or organs of the bady. It is therefore important that not only all physicians, but also the lay public, should become cognizant of their respiratory tract in order that they may at the earliest moment seek confirmation or dissipation of their apprehensions in regard to signs and symptoms originating in their respiratory organs.

It is mandatory that the knowledge of the signs and symptoms originating as a result of malignant tumors of the lung be made known to the public as a whole just as every woman knows the significance of a tumor of the breast and realizes the importance of immediately consulting a physician concerning the tumor.

In the analysis of this series of patients herein reported in regard to the most frequent signs and symptoms occurring in such cases of primary cancer of the lung, only those signs and symptoms were included that could be attributed to involvement of the lung itself and not to invasion of contiguous structures or distant metastases. In 71 per cent of the patients in this series cough was the chief symptom. In a nation of heavy cigarette smokers, in which the population supplying the majority of patients breathes the polluted atmosphere of cities, cough is almost universal and is due mainly to nonspecific irritation of the respiratory tract. The important point about coughing that should make one suspicious of the presence of an intrabronchial growth is the departure from the normal for any individual. If in an adult "chronic cougher" the type of cough changes to a spasmodic, productive or nocturnal type, or again, if a person who has heretofore coughed infrequently suddenly begins to be annoyed by a hacking cough day and night, attention should be focused on the bronchial tree and the presence of a bronchial neoplasm should be suspected. The development of a cough or changes in the character of coughing can portend an extremely serious condition. Until physicians as a whole, as well as the lay public, become more acutely aware of the serious significance of this sign, the opportunity for early and satisfactory treatment of pulmonary neoplasms will be denied to many patients. It is to be noted again that the outcome in this condition, unless recourse is had to surgery, is invariably fatal. These symptoms and signs are listed according to the frequency of their occurrence in Table 2.

In 63 per cent of our patients expectoration of blood or hemoptysis was associated with coughing. This varied from streaking of the sputum to the expectoration of large and copious amounts of blood, up to six ounces (180 ccs.). In the latter group the accumulation of blood in the mouth was preceded by a "gurgling" in the chest on one side which warned the patient of the impending hemoptysis. In our experience copious hemoptysis has usually been associated with the adenocarcinoma type of intrabronchial growth. Unless the x-ray and sputum examinations are indisputably those of tuberculosis or bronchiectasis, hemoptysis must be considered to be due to an intrabronchial growth until this has been ruled out by the many types of examination at our command. The burden of proof is on the physician who in any given case states that hemoptysis is not due to a tumor of the lung. This is true even though a small number of tubercle bacilli may be present in the sputum. Tuberculosis and cancer may be associated and were in four cases in our series. Clinical examinations to diagnose an intrabronchial tumor in no way interfere with the treatment of pulmonary tuberculosis; but if a patient bleeding from a tumor of the lung is observed for months in an attempt to prove the case to be tuberculosis, in many instances he will have lost his only opportunity for successful treatment. The discovery that the bleeding was originally from a neoplasm will have come too late.

Although it is uncommon to have pain as a prominent symptom in cancer of other organs, it is third in prominence among the signs and symptoms in patients afflicted with cancer of the lung. Pain arising from an intrabronchial neoplasm must be differentiated from the pain due to direct invasion of contiguous structures. Pain arising from the lung itself is not associated with the respiratory cycle, as is the pain of pleuritis. It is most often described by the patient as a constant dull ache deep in the chest. The frequency with which the actual position of the tumor, as shown by roentgenography, coincided with the location of the level of pain on the chest wall as indicated by the patient was surprising. In all probability pain does not arise within the tumor itself but is a result of pressure on the bronchial wall. Persistent pain in the chest, in the absence of inflammatory disease or aspiration of a foreign body, should always lead to careful investigation of the respiratory tract. Pain down the arm or in the chest wall, so characteristically found in the so-called "superior sulcus or Pancoast tumor," is as a rule due to direct invasion of the ribs or the brachial plexus or both. This distribution of pain is considered a very unfavorable symptom from the standpoint of operability.

Loss of weight due to cachexia in advanced carcinomas of any organ in the body, particularly the gastrointestinal tract, is well known and obvious; but not so easily understood was a striking loss of weight in 39 per cent of the cases of pulmonary carcinoma. This loss of weight was, of course, due in part to coughing, loss of appetite because of hemoptysis and sputum, worry and so on; but the rapid gain of thirty to fifty pounds in a few months after total pneumonectomy for the removal of a relatively small growth remains unexplained.

Fifth on the list of signs and symptoms is hyperpnea, occurring in 23 per cent of the patients. These patients complained of a sudden desire to breathe in deeper breaths, not exactly similar to air hunger but approximating this condition. The deep breathing sensation one experiences when breathing carbon dioxide would seem to be similar. This paroxysmal hyperpnea came on suddenly and lasted for a few seconds or a few hours. The mechanism for this respiratory phenomenon is difficult to explain. It may possibly be caused by a plug of mucus occluding a secondary or tertiary bronchus already partly plugged by an intrabronchial neoplasm, the bronchopulmonary segment of lung, to which the occluded bronchus is a tributary, thus becoming the site of an obstructive emphysema. Reflex disturbances in the respiratory rate and amplitude are thus set up. With expulsion of the mucus plug the respiratory rate returns to normal. Such unusual changes in the respiratory cycle, even though of short duration, should excite one's curiosity sufficiently to suggest a thorough examination of the bronchial tree.

Eighteen per cent of the patients had suffered from attacks of pneumonitis associated with bouts of fever and all the signs and symptoms characteristic of pneumonia. It was frequently possible to obtain a history of numerous attacks of so-called "pneumonia" in the recent past. The chief characteristic of these attacks was that they occurred at any time of the year with apparently no tendency toward seasonal incidence, as in the true epidemic pneumonia. Furthermore, physical signs were atypical and in unusual locations as regards the lung itself. Lobar, broncho or intestinal pneumonia, as a rule present fairly typical signs. This is not the case in pneumonitis due to bronchial obstruction associated with primary carcinoma of the lung. The explanation for these unusual observations is not far to seek when their pathogenesis is considered. When obstruction of a bronchus, whether primary, secondary, tertiary or quaternary occurs as a result of a new growth along or in association with mucus plug, the bronchial tree peripheral to the point of occlusion becomes filled with mucus. Eventually infection of this bronchopulmonary segment occurs and the clinical syndrome of localized pneumonitis is produced. A portion of a lobe of greater or lesser dimensions, the entire lobe or even the entire lung may be involved. If exacerbations of such a pneumonitis are of sufficient frequency, bronchiectasis or even an abscess will at times supervene. Often such an abscess perforates into the pleura and produces putrefaction empyema. The point to be emphasized is that when an unusual sequence of events takes place, or when any one of the aforementioned inflammatory episodes occurs that cannot be explained as a complication of a typical pneumonia or as a result of aspiration of a foreign body, an intrabronchial growth should be suspected. It is the repetitious nature of such pneumonitis which makes it so significant.

In general, it may be stated that there are no characteristic or pathognomonic signs and symptoms of primary carcinoma of the lung. This lesion masquerades as many of the commoner disorders of the lung. The onset is often insidious, but the recurrent nature of signs and symptoms previously described should call attention of the patient and the physician to the respiratory tract, so that a thorough examination will be carried out. Especially is this true of a patient who has previously had excellent health and in whom after the second decade there develops a cough associated with spitting of blood. Too often precious time is lost because of a diagnosis of pulmonary tuberculosis, lung abscess, unresolved pneumonia, bronchiectasis or heart disease. The methods of examination employed to rule out the presence of an intrabronchial growth in no way interferes with the diagnosis or treatment of any of the conditions which are at times mistaken for such a growth.

Diagnosis

In this series of 327 cases the roentgenograms of the chest were positive in every instance. It is not suggested that a diagnosis of primary carcinoma of the lung could be made from the roentgenographic studies alone, but there was in each case an abnormal shadow which necessitated further study and examination. Thus it may be stated emphatically that in every instance in which roentgenograms of the chest show a departure from normal, and in which this departure is not in every way characteristic of one of the commoner lesions of the lung, the presence of bronchogenic cancer should be inferred. Unquestionably, the x-ray of the chest is the most important and simplest method of examination at our disposal. Even in the earliest stages of growth of a primary carcinoma of the lung the lesion, as a rule, can be discovered. In the early part of the last decade and even today it was and is disheartening to watch an early lesion develop over a period of months into an inoperable cancer of the lung because physicians who were not and are not aware of this danger would advise the patients to "wait and see what happens." "Coming events often cast their shadows before them"; it is equally true that shadows cast by hilar infiltration due to other conditions such as tuberculosis and even normal structures are confusing. However, an infiltrating hilar shadow in a patient past middle age associated with cough, hemoptysis and the absence of a tubercle bacillus in the sputum almost certainly indicates a bronchogenic carcinoma; most of these carcinomas are located at or near the hilus or root of the lung. The diagnosis of cancer of any organ cannot be definitely made by x-ray examination alone, but the more experienced the observer the greater the likelihood of an accurate interpretation. Positive roentgenograms may show a shadow produced by the new growth itself or by an area of atelectasis, bronchiectasis, pneumonitis or abscess caused indirectly by occlusion, by the growth, or a bronchus leading to a bronchopulmonary segment or segments.

In my experience, second to the roentgenogram in importance in yielding information which is helpful in arriving at a definite diagnosis is bronchoscopy. In fact, either by direct vision or biopsy or both a positive diagnosis of primary carcinoma of the lung can be made only in this manner. In 70 per cent of the patients in this series a positive biopsy of the cancer was obtained. A pulmonary new growth in the periphery or even in the hilar lesions confined to the upper lobes may be beyond the vision of the bronchoscopist. Nevertheless, valuable information can be elicited by bronchoscopy even when the growth cannot be seen, such as fixation or deformity or both due to pressure of any visible portion of the bronchial tree. The presence of blood or purulent discharge from certain bronchi serve as a lead. In this series of cases there have been untoward results during or after bronchoscopic examinations.

Bronchography is a useful diagnostic method only to reveal occlusion of a bronchus by a small growth which does not produce a shadow in the x-ray of the chest. However, it is a harmless procedure and may be the link in the chain of evidence pointing to the possible presence of carcinoma of the lung.

Aspiration biopsy has a limited field, is often difficult to interpret and such procedures are not without danger of implanting some cells along the tract of the aspiration needle or infecting the pleural cavity with the same cells, with tubercle bacilli or other pyogenic organisms. Aspiration of the bronchial tree has in some instances revealed cancer cells which could be obtained for microscopic examination.

Exploratory thoracotomy should be resorted to far more frequently in the future than it has been in the past. This is, with the present day anesthesias and surgical technique, a relatively harmless procedure, far more so than exploratory laparotomy and attended with fewer dangerous sequelae such as adhesions. Exploratory thoracotomy is far less incapacitating than laparotomy. When it has been impossible to arrive at a definite diagnosis by all the means at our disposal this procedure should be performed at once, if a dangerous pulmonary lesion such as primary carcinoma is suspected. In our series of cases no deaths have occurred as a result of simple exploration of the chest. If direct observation and palpation of the lesion does not reveal the true nature, excision of the entire area in the lobe should be performed for immediate microscopic examination, and the diagnosis is made as is customary for questionable cases of carcinoma of the breast. If further discussion of the situation with the patient seems advisable, the wound may be closed and the patient returned to his room for further consultation. Later in the week the chest may be reopened and the definite procedure carried out. The old idea that opening the thoracic cage at operation is another form of euthanasia which must be abandoned. The impression that all primary malignant tumors of the lung are slow growing and late in metastasizing is incorrect.

Pathology

The surgical removal of primary carcinoma of the lung in a relatively early stage has brought about changes in our ideas of the origin and nature of the growth of such tumors. In the past practically all the data were based on the autopsy in very late cases, when it was impossible on account of the almost universal involvement of the lung and contiguous structures to determine the nature, origin and process of the growth within the lung. In this series of cases the tumors occurred at or adjacent to the hilus, the minority in the periphery of the lung. The latter seemed to spread throughout the area of the lung in which they originated by centrifugal growth, most of them apparently having arisen in the alveolar lining cells. The hilar tumors, all of which were bronchogenic in origin, grew grossly in two separate fashions. The one, an intrabronchial tumor arising apparently from the bronchial mucosa, grew into the lumen of the bronchus and towards the trachea. The centripetal tendency of the growth, occluding completely or partly the primary or secondary bronchus was characteristic. The other type of hilar growth was an extrabronchial tumor which, probably arising in the wall of a secondary, tertiary or quarternary bronchus, would break through the wall and grow along outside of and often completely around the bronchus. This type of growth also showed this centripetal tendency, growing around and about the secondary and primary bronchi and then spreading directly into the mediastinum to involve the structures contained herein.

The clinical course is dependent to a great extent on the method of growth. It is, of course, obvious that the intrabronchial type will produce respiratory difficulties, cough, sputum, and hemoptysis much earlier than the extrabronchial tumor. The first symptoms caused by the latter method of growth may be, for example, interference with the venous return from the neck owing to the involvement of the superior vena cava on the right side, or recurrent laryngeal palsy on the left, or Horner's syndrome. Malignant tumors arising in the periphery are as a rule asymptomatic. They may be said to arise in the silent area of the lung and as they do not as a rule produce bronchial obstruction or erode pulmonary vessels the symptoms and signs are usually those dependent on invasion of the pleura and chest wall and, by direct extension, the brachial plexus.

In 70 per cent of the 112 patients on whom a total pneumonectomy was performed there were metastases to the bronchial and tracheal lymph nodes. This fact emphasized the necessity of performing a total pneumonectomy with dissection of these regional nodes in order to effect a permanent cure. In the remaining 215 that were inoperable, in addition to the metastases in the regional nodes the various organs and structures that were the site of metastases are listed in the order of the frequency of their involvement; supraclavicular and axillary lymph nodes, liver, pleura, pericardium and heart, contralateral lung, osseous tissue, brain and multiple areas in the skin and subcutaneous tissue.

The characteristic histologic structure of the tumor occurring in this series of cases was that of a flat and squamous cell carcinoma and adenocarcinoma. Under these two main headings were included various examples such as oat cell, cylindrical cell and adenocarcinoma thought to be different forms of the same tumor. The adenocarcinoma type is pleomorphic.

Sections of the tumor differ depending upon the region from wihch they were cut. Sixty-five per cent of the cases in this series were composed of a flat or squamous cell cancer and 35 per cent the adenocarcinoma group.

It is interesting to note that the length of life computed on the basis of the microscopic characteristics of the tumor showed that those afflicted with the squamous or flat cell type lived a greater length of time than those with the adenocarcinoma type.

Treatment

Preoperative preparation. For several days preceding operation the patient should be carefully prepared. It has been our custom to treat the patient with intramuscular injection of penicillin 30,000 units, every three hours, avoiding awakening the patient at night. In addition to this penicillin aerosol should be employed. Whether or not some of the sulfonamides should be used has been questioned. It is my personal opinion that for some days, approximately three, sulfamerazine may be administered by mouth. The patients thus have a protective blood level of this drug which apparently does no harm. It is merely an added questionable merit and so far we have not been able to observe any demerits.

However, the preoperative preparation which we consider of the greatest importance is the induction of artificial pneumothorax. The advantage of this procedure has been proved over a period of years. In the first place, it must be considered a therapeutic test, particularly in individuals in the fifth or sixth decade in which there may be a certain degree of unrecognized emphysema. Removing the lung at operation without knowing whether or not the patient can sufficiently oxygenate himself with the remaining lung may constitute a fatal error and in the past we have experienced this tragic result. The ability of the remaining lung to function sufficiently for the needs of the patient can be established before operation is performed by merely collapsing the lung on the affected side. Various tests, such as oxygen saturation of the blood at body rest and during exercise of various degrees of intensity can be ascertained. For after all to cure a patient of a malignant tumor of the lung is futile if the patient is left with insufficient aeration surface to support normal respiration. There are other minor advantages and secondary ones associated with artificial pneumothorax, such as diminishing the size of the lung so that the mechanical handling of this structure is technically made easier at the time of operation. Second, the patient has learned to breathe with one lung previous to operation and with the increased intrapleural pressure thus avoids pleural shock on opening the thoracic cavity. Third, the blood flow through the collapsed lung is less than through the expanded contralateral lung and therefore the strain on the right heart from shifting greater blood flow through the pulmonary artery is graduated. Fourth, the location of a growth as regards the position relative to the mediastinum is often silhouetted and therefore located more accurately in the collapsed lung than with an expanded lung.

Treatment. In our present state of knowledge the only efficacious method for treatment of pulmonary carcinoma is by surgical removal of the entire organ, together with the regional lymph nodes. Medicinal and radiation therapy are only palliative, and as these tumors are, as a rule, radio-resistant, radiation therapy is of no benefit. It is interesting to note that in 215 cases of this series which were found to be inoperable at the time of exploration of the thoracic cavity, the average length of life after leaving the hospital was approximately five months and this in spite of the fact that every type of supportive therapy, and in many instances, radiation therapy, were employed. It is to be emphasized again that the disease runs a fatal course in 100 per cent of the patients in whom the lung cannot be removed in its entirety by operation. From an anatomical standpoint, the lung lends itself to surgical removal more readily than any other organ in the body, with the possible exception of the breast. From the point of view of the biologic characteristics of primary carcinoma of the lung surgical removal is more apt to be successful because of the relatively slow growth and spread of these tumors as compared to similar tumors in other regions of the body. Finally, the remarkable ability and tendency of the contralateral lung to undergo compensatory changes prevents incapacitation of the patient from a physiologic point of view.

Operative Technique

The operative technique now employed for one-stage total pneumonectomy in the treatment of malignant tumors is essentially the same, except for closure of the bronchus, as that described by the author in 1933 in the

Johns Hopkins Hospital Bulletin.*

A number of points in the operative technique, as would be expected, are still controversial and as in any other operative procedure a unanimity of opinion as regards the various methods is hardly to be expected. But, after thirteen years' experience and having employed this operative technique in 327 cases, of which 112 were total pneumonectomies, it is felt desirable, with the background of this experience, to discuss certain steps in the operative procedure which are of special interest.

In the first place, the anterior approach is definitely to be preferred to the posterior or lateral for the following reasons: a) The width of the intercostal spaces is greater anteriorly than posteriorly and the necessity for resection of ribs is therefore, as a general rule, not necessary. This reduces the operative time and the general ill effects of the procedure upon the patient. The thoracic cavity is more quickly entered with a minimum amount of damage to the chest wall and parieties. The use of a self-retaining retractor gives sufficient exposure so that the question of operability can be promptly adjudged. The time consumed from the incision to the entrance of the pleural cavity is far less when the anterior approach is employed and associated with this there is a minimum loss of blood as well as trauma to tissues. If a greater amount of exposure is desired the adjacent intercostal cartilages can be incised and the ribs, usually the third and fourth, can be displaced cephalward or caudalward. Also, by slightly rotating the patient on the operating table or the table itself, if desired, the incision can be extended laterally so that the maximum exposure can be obtained. If the tumor proves to be inoperable, the minimum of operative trauma has been incurred. The operability can be determined at once with the minimum operative effort. In the event the growth is operable the dissection of the hilar structures, such as the pulmonary artery and veins which lie anterior to the bronchus, is accomplished with far greater ease and facility when the anterior approach is employed. The advantage of ligating the pulmonary artery at the beginning of the operation is obvious, the control of hemorrhage is thus more certainly assured and the greater percentage of blood normally contained within the lung is returned to the general circulation via the pulmonary veins. Bleeding from any adhesions that may exist between the visceral and parietal pleura is reduced to a minimum. If for any reason it is felt desirable to interrupt the operative procedure and perform the operation in two stages, one can do so after ligation of the pulmonary artery, provided the pulmonary veins have been left intact. If the latter are ligated, the lobe which either one or both pulmonary veins drain, must be removed, for otherwise, gangrene of this portion of the lung will ensue. It is to be noted that the bronchial veins are vestigial in character and do not function sufficiently to even drain off the blood brought to the lung by the bronchial artery, to say nothing of that from the much larger pulmonary artery. When the pulmonary artery, which carries venous blood, is ligated, collateral circulation through the bronchial artery is at once established. The bronchial artery brings sufficient arterial blood to the lung to maintain this organ in a normal state of nutrition and the circulation through the lung is thus changed from a venous to an arterial one, whereas normally the greater amount of blood flowing through the lung capillaries is venous in character originating from the pulmonary artery, the blood flowing into the same capillary bed from the bronchial artery is arterial. Stoppage of the blood flow from the pulmonary artery by ligature of the latter, incurs a great increase in flow from the bronchial artery and thus fills the capillary bed in the lung and the bronchus of the pulmonary artery up to the point of ligation with arterial blood, containing such a high saturation of oxygen that the lung is thus rendered essentially functionless as far as further oxygenation of the blood flowing through it is concerned. The development of this collateral circulation via the bronchial artery begins after ligature of the pulmonary artery is performed. In the early days simultaneous ligation of one or both pulmonary veins invariably resulted in moist gangrene of the corresponding lobe or lobes because of the vestigial character of the bronchial veins. In the event of ligation of a pulmonary vein that portion of the lung whose venous bed is a tributary to that vein must be removed at the time of operation.

Not infrequently total pneumonectomy may be carried out with a greater degree of safety if a two-stage operation is performed, in which only the pulmonary artery is ligated as the principal objective of the first stage. This is particularly true when the lung is the site of a great deal of infection and extensively adherent. The arterialization of the lung with a flow of more highly oxygenated blood would appear to have a beneficial effect on the pulmonary infection and therefore the patient's clinical condition.*

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*Bulletin of the Johns Hopkins Hospital. Vol. liii. No. 6, 390, 1933.

*In patients suffering from pulmonary tuberculosis ligation of the pulmonary artery has a definite deleterious effect. In eight patients the pulmonary artery was occluded with the idea of bringing about an atelectasis of the lung. The lesions were very extensive in each case and associated with large cavities. However, the change from a lower oxygen tension in the blood flow through the lung following ligation of the pulmonary artery, to the higher oxygen content of the blood flow from the bronchial artery exercised a most marked detrimental clinical and pathological effect on the patient and lung. This was apparent by a more rapid progression of the manifestation of the disease than would have been expected had the pulmonary circulation not been interfered with at all. No atelectasis was produced and cavitation increased rapidly. This unfavorable result was attributed to the fact that the tubercle bacillus flourished in an environment of higher oxygen content. It would be interesting to find out the effect of ligation of only the bronchial artery in a pulmonary tuberculosis. The reverse condition of oxygen saturation would obtain.

Dividing the operation into two stages greatly diminishes the shock of the procedure. It has been found that the pulmonary vessels, the artery and veins, are best ligated with silk and in no instance has this type of ligature been known to cut through the vessel wall.

Treatment of the Bronchial Stump

Since 1942, when the method of closing of the bronchus was first reported by the author in the Annals of Surgery[2] the bronchial stump has been occluded by the use of mattress sutures of interrupted silk or cotton placed through the bronchus in such a manner that the posterior membranous portion is approximated to the anterior cartilaginous wall, somewhat proximal to the end of the amputated stump, thus creating a viable cuff from one to two cm. distal to the suture line which immediately fills with a fribrinous clot that thereafter becomes infiltrated with cells and eventually forms a plug. One of the more important steps in securing a satisfactory closure of the bronchial stump is to sew a pedicle flap of parietal pleura over the end of the stump of the bronchus approximating the pleura to the rim of the viable cuff. The use of any form of cauterization or traumatization to the end of the bronchial stump has been studiously avoided in order that agglutination of the rim of this cuff and the pleural membrane would be brought about immediately and permanently. Any foreign material such as suture in the end of this cuff or devitalization of the rim of this cuff will militate against the immediate healing. Therefore, the bronchial stump should be sutured at least a centimeter proximal, if possible, to the point at which amputation is anticipated. Regardless of the type of suture material or the manner in which it is placed, cutting through the posterior or anterior membranous portion of the bronchus will frequently occur. This has been proved experimentally and at autopsy.[2] Unless every opportunity is therefore afforded for the bronchial cuff distal to the suture line to heal by the formation of granulation tissue within its walls leakage will follow in a rather high percentage of cases. In the event that the bronchial growth extends up towards the carina the bronchus and also the lower end of the trachea may be sutured after a diagonal incision in this structure has been made. This suture, as in the bronchus, should be tied sufficiently tight to approximate the walls of the bronchus or trachea, but not enough to cause crushing of the tissue, if so, the sutures will cut. They should also be placed so that the knots are tied about the cartilaginous rings, that is on the anterior surface of the bronchus or trachea. Healing of the stump takes place at the cut end and the sutures which occlude the lumen of the bronchus, usually from four to six in number, must be considered as only temporary, with their main purpose to exclude the passage of air through the bronchial stump long enough for the healing of the end of the bronchus to be completed, or sufficiently so, that in the event the sutures cut through, to form a tight and impenetrable occlusion of the bronchial stump that will not open up and allow air to pour into the pleural cavity. The healing of the end of the bronchial stump requires, as a rule, from one to two weeks. varying in different individuals, and seems to be completed in the majority of cases after a period of ten to fourteen days. However, there have been instances in our series in which the stump in one patient reopened after a month, one ofter three months and even one after eight months. However, these fortunately eventually healed and the patient was none the worse off except for the disagreeable experience associated with walled-off empyema, which was satisfactorily treated by drainage and irrigation with penicillin.

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[2] Annals of Surgery, 116, No. 4, 1942.

Interrupted mattress sutures may be employed by stitching the anterior cartilaginous wall laterally, enfolding the posterior membranous portion, providing the cartilaginous rings are incised at the apex of their arc, this is in the midline of the anterior surface of the bronchus. This method has been satisfactorily employed in some cases.

All types of suture material have been used, catgut, silver wire, steel wire, fascia and others and it is our opinion that interrupted sutures of silk and cotton would seem to be the material of choice.

Before the bronchial stump is sutured, after amputation of the lung, the inside of the remaining bronchus should be carefully inspected, for not infrequently a blood clot or even a piece of tumor tissue may be dislodged from the lung into the primary bronchus during the course of the operation. Immediately following operation the patient is again bronchoscoped while on the operating table before returning to the ward. Often small clots and pieces of tumor tissue have been discovered not only in the bronchial stump on the operative side, but even in the trachea. If these foreign bodies were not removed aspiration into the contralateral lung might eventuate in the death of the patient.

Mobilization of the parietal pleura may be accomplished on either side by loosening the pleura from the endothoracic fascia either anteriorly or posteriorly in the vertebral gutter. No difficulty has been experienced in obtaining a sufficient amount of pleura to cover over completely and without tension the entire raw hilar area.

At the end of the operation 150,000 units of penicillin have been introduced into the thoracic cavity. The intrapulmonary pressure, as the wound in the chest wall is closed, has been increased to not more than 10 mm. of mercury. The entrapped air is removed to the fullest extent possible by leaving a small catheter in the wound during closure. After the last interrupted suture is placed in the skin all the air that can be is removed by aspiration and the catheter itself is then withdrawn. No drainage of the pleural cavity is felt desirable even in the presence of infection, within the lung itself, and when purulent material has been unfortunately and accidentally spilled into the pleural cavity.

Since penicillin has been available, when gross infection has been present it has been our custom to introduce every other day 50,000 units of penicillin into the thoracic cavity. In addition the drug is also given intramuscularly up to 50,000 units every three hours. No instances of empyema have been encountered in cases so treated, and thus the necessity for performing thoracoplasties to obliterate infected dead space in the thoracic cavity has been avoided.

A word of caution should be given here in regard to the possibility of the development of interstitial pulmonary emphysema as a result of increasing the intrapulmonary pressure either too rapidly or to too great an extent, in an endeavor to hyperdistend the lung on the unoperated side for the purpose of obliterating the dead space in the thoracic cavity on the operative side. Rupture of alveoli within the lung substance itself producing a mediastinal, plus extensive subcutaneous as well as visceral emphysema was encountered in one case of diaphragmatic hernia followed by death from cerebral and coronary air emboli, proved at autopsy.

The final proof of the efficacy of any method of therapy naturally is a critical analysis of the immediate and remote results. Of 327 cases of primary carcinoma of the lung, as shown in Table 3, 215 or 66 per cent were inoperable, whereas 112 or 34 per cent were operable. This ratio of the inoperable to the operable cases is far higher than it should be, for in the majority of instances the attending physician and oftentimes even the patients had been aware of a lesion in the lung for many months and often years before submitting themselves to operation. Undoubtedly, in the future, as the field of thoracic surgery is developed, the disproportion will be reduced. There will always be those instances in which a malignant tumor begins in the periphery of the lung, the so-called silent area and produces no symptoms or signs until involvement of the pleural or contiguous structures renders the case inoperable. Fortunately, this group comprises only about 10 per cent of the cases of malignancy of the lung, 90 per cent occurring near the hilus and producing warning signals early in the process of the disease. Unless for palliative reasons to rid the patient of an infected lung due to neoplastic bronchial obstruction, for example, pneumonectomy should not be performed if the tumor has involved contiguous structures. Therefore, inoperability would be manifest by involvement of the parietal pleura or any of the underlying structures.

Table 4 reveals the number of cases, i.e., 215, of inoperable carcinoma of the lung which have been subjected to operation from January 1934, until July 1946. This number does not include those patients that were clinically inoperable. The clinical findings which we have found to indicate a spread of the tumor beyond the confines of the lung and therefore render the case incurable from a surgical standpoint are the following: metastases to the opposite lung or mediastinum, direct metastases to brain, osseous tissue liver, skin, axillary and supraclavicular glands, pleural effusion, clear or serosanguineous, continuous pain to shoulder or referred down the arm, Horner's syndrome, left recurrent laryngeal palsy or hemi-paralysis of the diaphragm.

Although the number of cases of inoperable carcinoma of the lung have apparently increased since 1939, when Table 4 is compared to Table 5, there is very little fluctuation in the ratio of operable to inoperable cases, over the same period of time. All patients with lesions of the lung which have been diagnosed probable malignant tumors should be explored, regardless of the size or position of the tumor or the age of the patient. In the absence of clinical signs or symptoms of a spread of the disease from within the limits of the lung itself the question of operability can be determined only by exploration of the chest.

In this series of cases, there have been 112, in which total pneumonectomy was performed for carcinoma of the lung.

Table 5 represents the number of total pneumonectomies done each year for carcinoma of the lung together with the deaths occurring within one month of the operation. All deaths within this time limit were considered in the group of immediate postoperative mortality because of the fact that the patients had remained in the hospital that long and although in some instances death was in no way connected with the actual operative procedure. From 1933 through 1939 there were thirty cases with eight deaths, or a mortality of 27 per cent. From 1940 through half of 1946, eighty-two patients were operated upon with seventeen deaths, or a 20.7 per cent mortality. Thus, in spite of an increase in the number of patients there was a 5 per cent increase in immediate postoperative mortality. Undoubtedly in the future this hospital death rate will be decreased because of several reasons, such as earlier reference of cases by the general practitioners, improvements in operative technique, chemotherapy and anesthesia. In addition, postoperative care has improved remarkably. Penicillin is now given intramuscularly, by inhalations, and intrathoracically, so that the chance of developing a postoperative empyema is almost nil.

Important as the immediate operative mortality is, and it should be very jealously guarded, the efficacy of the operative procedure should also be judged by the ultimate results. The duration of life following total pneumonectomy for carcinoma of the lung is shown in Table 6. It is to be noted that patients dying after various periods of time are so charted in comparison to patients still living following operation. Those dying following operation who died less than one month afterwards were considered an operative mortality. The total operative mortality of the 112 cases for total pneumonectomy for carcinoma of the lung was 22 per cent. Of the patients who are now dead, but who lived for various periods of time after operation, i.e., from one month to six years, the number surviving the different periods of time was forty-four. This group of cases made up 39 per cent of the total. Reference must be made of the fact that of the 215 cases of inoperable carcinoma comprising this series, the average duration of life after exploration of the thoracic cavity was five months, so that even in the group, in Table 6, which are now dead but live various periods of time following operation, the average duration of life after removing the lung was greater by far in those patients in which the lung could not be removed. Of the patients living at the present time, 39 per cent of the total, or forty-three patients, have survived from one month to thirteen years. Of this group, twelve patients have lived five years or more, one thirteen years, one eleven, two nine and two six. As they are still living there is a possibility they may live for many years. It would seem desirable to call attention to the fact that all these patients, except one who was a professional boxer, have been restored to their normal activities. They have been able to return to their former vocations and even recreations, such as golf, swimming, fishing, and hunting. In all except the occasional case, since it has not been found necessary to perform a thoracoplasty, no deformity of the patient is visible from the removal of the affected organ. The remaining lung expands to fill the dead space. This intrathoracic readjustment has been reported in detail elsewhere. If these results are compared to those obtained from the surgical treatment of carcinoma of the thyroid, breast, esophagus, stomach, and large and small intestine, reported over a corresponding length of time(thirteen years) it will be evident that removal of the lung for primary carcinoma offers at least as great if not greater probability of permanent cure as the surgical treatment of carcinoma of any other organ in the body.

Of the group of patients who lived for some time (up to six years) following operation, but who are now dead, the majority were definitely improved by relieving the coughing, hemoptysis and often extensive pulmonary suppuration with its attendant discomfort and manifestations.

Conclusions

An otherwise fatal disease, primary carcinoma of the lung, can be satisfactorily treated by surgical removal of the entire organ. Surgical measures short of total pneumonectomy are not efficacious. Postoperative mortality and longevity are at least as good as, if not better than, the postoperative results following the surgical treatment of carcinoma of other organs.

Table 1.

Distribution According to Sex of Cases of Primary Carcinoma of the Lung

	Operable	Inoperable
Male	84%	86%
Female	16%	14%

Table 2.

Signs and Symptoms of Carcinoma of the Lung

Cough	71%
Hemoptysis	63%
Pain	50%
Loss of weight	39%
Hyperpnea	23%
Pneumonitis	18%
Fever	13%
Tightness in chest	3%

Table 3.

**Carcinoma of the Lung
Ratio of Operable to Inoperable Cases**

	No. of cases	Percentage
Operable	112	34
Inoperable	215	66
	327	100

Table 4.

**Cases of Inoperable Carcinoma
According to years**

	No. of Cases
1934	2
1935	3
1936	9
1937	17
1938	22
1939	14
1940	21
1941	16
1942	22
1943	19
1944	19
1945	37
1946	14
Total	215

Table 5.

Pneumonectomy for Carcinoma of the Lung Operations and Mortality according to Years

	No. of Operations	No. of Deaths
1933	2	0
1934	1	1
1935	g	1
1936	4	2
1937	5	0
1938	7	2
1939	6	2
1940	10	0
1941	13	3
1942	9	4
1943	9	2
1944	12	2
1945	15	5
1946	14	1
	112	25

Table 6.

Pneumonectomy for Carcinoma of the Lung

	No. of Cases	Total	Percent.
Patients dying after various periods of time:			
Less than 1 month	25	25	22
1 month to 6 years			
1 mo. to 6 mos.	20		
6 mos. to 1 yr.	10		
1 yr. or more	6		
2 yrs. or more	2		
3 yrs. or more	3		
4 yrs. or more	1		
5 yrs. or more	1		
6 yrs or more	1	44	39
Patients living:			
1 mo. to 6 mos.	12		
6 mos. to 1 yr.	2		
1 yr. or more	8		
2 yrs. or more	5		
3 yrs. or more	4		
5 yrs. or more	4		
6 yrs. or more	2		
9 yrs. or more	2		
10 yrs. or more	2		
11 yrs. or more	1		
13 yrs. or more	1	43	39
		112	100

TOBACCO MONEY PAYS PRESS AND RADIO

In the same month in which Winchell told 25,000,000 that cancer is a killer, the American Institute of Homeopathy met in actual convention at Swampscott, Mass., and heard, among other reports, one giving the latest scientific findings which show—not for the first time—that the use of cigarettes, cigars and pipe tobacco have a direct relation to the increase of cancer.

Since 52 per cent of the American adult population of the nation now smokes (Gallup poll 12/20/44) this would have been startling news to at least 52 per cent of the readers of the newspaper press, and to Winchell's 25.-000,000.

Diagnostic and Therapeutic Consideration in Carcinoma of the Female Breast*

WILLARD H. PARSONS, M.D.†
Vicksburg, Mississippi

BETWEEN January 1, 1946, and December 31, 1946, I personally operated on 1,047 patients, of whom eleven had cancer of the breast which was considered acceptable for surgical treatment. During the same period of time there were examined in the laboratories of surgical pathology of the Vicksburg Hospital, Inc., 4,214 tissues, of which forty-two represented malignancies of the breast. I have not had the time to review in any detail my personal records for the preceding ten years, but it is my impression that over this period of time the incidence of cancer of the breast in my own experience has been about what was in the year 1946, that is, 1.0 per cent. My experience with the disease is thus rather contrary to those of other surgeons: It is not encountered frequently, and it is seen less often than malignancy of certain other organs, such as the uterus and the rectum.

Whether they see it frequently or relatively infrequently, however, all surgeons who have had any experience at all with carcinoma of the breast realize its essential importance and its potentially lethal effects. For these reasons it becomes a duty to consider it at periodic intervals, even though few fundamental contributions have been made to the subject since the classical papers of the late William Stewart Halstead were published almost half a century ago.

INCIDENCE

Certain factors influence the incidence of cancer of the breast. For physiologic and anatomic reasons, too obvious to need discussion, it is almost exclusively a disease of women. I cannot recall, in my fairly long experience, having seen carcinoma of the male breast on more than one or two occasions. The disease is not at all unusual in women less than forty years of age but when it occurs in younger women it is apt to be highly malignant. In my own experience, about half of the women who consult me in the belief that a tumor of the breast is present actually have a demonstrable neoplasm, about half of those who present breast tumors have cancer of the breast, and about two-thirds of those who have cancer of the breast have metastases to the axilla at the time the diagnosis is made.

FACTORS OF MORTALITY

Certain factors also influence the mortality of carcinoma of the breast. The disease can usually be recognized relatively early in its course, and if prompt recognition is followed by prompt and fitting treatment, a large proportion of patients will remain well for five years and longer. But the disease is not always recognized early. It begins as a small nodule within the breast, and its presence may not be realized until it has existed for a considerable time, chiefly because, like early cancer in other locations, it causes no pain. A malignant breast lesion may promptly metastasize to the axillary lymph nodes and metastases in this region may present themselves before the initial lesion in the breast is apparent.

The recognition of a mass in the breast does not always bring the patient to the physician. Some women delay because they do not believe so slight a thing can be serious. Others delay because they do not want to be told that they have cancer. It is also tragically true that the patient who does consult a physician sometimes does not receive the right advice. The failure of a patient to seek medical advice, and the failure of a physician to make a competent examination, lead with equal finality to disaster.

Education of the laity is needed to influence women to report for periodic health examinations and to persuade women with lumps in the breast to report promptly for examination. It is equally important, however, to educate physicians to elicit a complete history and to perform an adequate physical examination as part of every consultation. Unless and until these criteria can be met, cancer of the breast will continue to be diagnosed late in a large proportion of patients, and the proportion of cures of the disease will continue, as at present, to be tragically small. Any clinician who regards carcinoma of the breast except as of major importance has indeed had a very limited experience with its management and particularly with its end results, and is totally unacquainted with the current medical literature.

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*Read by invitation before the Northeast Mississippi Medical Society, Tupelo, Miss., March 6, 1947.

†From the Department of General Surgery, Vicksburg Hospital and Clinic.

PATHOLOGIC CLASSIFICATION

Cancer of the breast falls into certain clear-cut pathologic categories:

1. Scirrhous cancer, the most frequent type of mammary malignancy, is often seen as a hard nodule, usually adherent to the skin or to the deep fascia and usually seen in the older age groups. It progresses less rapidly than the medullary variety and presents perhaps less tendency to ulceration, but the ultimate prognosis, in the absence of treatment, is no better.

2. Medullary cancer of the breast, which is relatively infrequent, presents as a soft tumor which tends to become very large and to ulcerate promptly. Small medullary tumors are not adherent to the skin or the deep fascia, and the diagnosis is therefore less simple and, without biopsy, is less positive than is the diagnosis in the scirrhous variety.

3. Gelatinous cancer of the breast resembles the medullary type clinically in that, when small, it is not adherent to the skin and fascia. It is generally less malignant than is the scirrhous type.

4. Inflammatory carcinomas of the breast comprise about 4 per cent of the total number of breast malignancies. That their incidence is small is extremely fortunate, for the prognosis is exceedingly poor. The clinical picture is that of acute mastitis. The breast is red and hot, and fever is usually present. The inflammatory character of this type of malignancy is the result of extensive carcinomatous lymphangitis. Progression is rapid, and a promptly fatal outcome is the rule, irrespective of the type of treatment used. It is quite possible, incidentally, to confuse the rather unusual lesion known as plasma cell mastitis with inflammatory carcinoma; I have made the diagnostic error myself on at least two occasions.

5. Paqet's disease of the nipple, a highly interesting and relatively unusual lesion, begins as a chronic eczematoid lesion which microscopically presents nests of clear hydropic cells within the epidermis. Because it is for all practical purposes an intraductal carcinoma, located in some one of the ducts leading to the nipple, axillary metastases may be demonstrable before a palpable tumor of the breast exists.

6. Comedo carcinoma of the breast is a non-adherent, slowly progressing tumor which may be localized or diffuse. In this type of lesion, in contrast to all other varieties, simple mastectomy effects a cure in perhaps 65 per cent of all patients.

It is an unfortunate aspect of every variety of carcinoma of the breast that, as already noted, it metastasizes fairly promptly to the axillary lymph nodes. It is even more unfortunate that the mediastinal nodes may be invaded before the axillary lymph nodes, though this is not the usual sequence of events. The supraclavicular nodes are involved with a fair degree of frequency. They, like the axillary nodes, can be extirpated, but surgical removal of the mediastinal lymph nodes is not possible. When distant metastatic lesions have developed, the prognosis is hopeless from any standpoint. Locally, as the breast lesion progresses, there is extensive fixation of the lesion to the skin, which presents a typical orange-peel appearance.

DIAGNOSTIC CONSIDERATIONS

Under certain circumstances the diagnosis of carcinoma of the breast is difficult and confusing. Small carcinomas which occur between the skin and fascia and which are not adherent to the skin are sometimes considered benign. In this type of tumor, and indeed in any type in which the diagnosis is not immediately apparent, biopsy will establish the diagnosis and should not be omitted. Even so excellent a pathologist as Bloodgood was, by his own frank testimony, was not infallible in his clinical judgment concerning the nature of breast tumors.

It would seem unnecessary to warn that examination of the breast should be performed gently except that it is frequently amazing to observe how that simple precaution is violated. The breast is vigorously palpated, the various quadrants are squeezed, and repeated examinations are made by one physician after another. Such methods of examinations are as unnecessary as they are dangerous.

Bleeding from the nipple is a disturbing symptom to the patient and should be equally disturbing to the physician, for a remarkable divergence of opinion exists concerning its significance. Some clinicians stress the frequency of such a discharge in carcinoma of the breast and regard the finding as of great diagnostic importance. Others attach far less importance to it. It is true that this particular symptom seems to be more frequently associated with benign intraductal papillomata than with mammary malignancy, but that generalization does not settle the problem of the individual case.

In my own experience, the major attention in this sort of case should be devoted to the physical study of the affected breast rather than merely to the bloody discharge. If a careful study, including transillumination, preferably supplemented by microscopic examination of the discharge, reveals no palpable tumor in the breast, and if the patient is a young woman, my own preference would be to omit biopsy, since the site for it cannot be chosen intelligently, in the absence of a localized tumor, and to reëxamine the breast at frequent, regular intervals. If the patient is an older woman, my preference would be for simple mastectomy and I would be guided as to further therapy by the results of histologic study of the excised specimen. A review of the literature indicates that less than 10 per cent of patients with a bloody discharge from the nipple actually have carcinoma of the breast. In a series of 2,460[1] women with malignancy of the breast, only 102 had a bloody discharge from the nipple, while in a series of 2,917 women with benign breast lesions, 185 had such a discharge.

PLAN OF MANAGEMENT

The safest plan of management for every patient with a palpable tumor of the breast is to advise its wide excision and immediate microscopic examination. The patient is kept in surgery during the time the tissue is under examination, and if malignancy is reported, an immediate radical mastectomy is done. Roentgenograms of the chest and spine should have been performed before operation, to identify possible metastatic lesions. Preoperative deep roentgen-ray therapy is not necessary or advisable unless the lesion is of the inflammatory type, in which case, as already pointed out, it makes unfortunately little difference what plan of therapy is employed. I might say here that I also do not advise deep roentgen-ray therapy after operation unless the lesion is reported as grade 3 or grade 4 by the Broders' classification, unless the axillary lymph nodes are involved, or unless roentgenograms have shown involvement of the mediastinum.

A word concerning biopsy methods might profitably be said. The incision should not be made through the tumor mass, which should, instead, be widely excised. By this method the pathologist receives a more suitable area for study, and a better plastic reconstruction of the breast is possible in the event that the lesion is benign, while if it proves to be malignant, the risk of cutting into it needs no comment. It is not necessary for me to discuss the enormous value to the surgeon, as well as to the patient, of an available pathologist to make immediate frozen section studies of the excised tissue. That subject is listed on this program for later discussion. I do want to emphasize, however, my own strong feeling that a twenty-four-hour delay in the performance of radical mastectomy following biopsy which discloses cancer of the breast decreases by perhaps 10 per cent the patient's chances for cure.

Radical mastoidectomy is the treatment of choice of carcinoma of the breast. Certain points of technique might be mentioned. My own preference is for a transverse incision if the location of the growth makes this feasible. In any event, a scar across the upper portion of the axilla is objectionable and is seldom necessary. The superior flap should be reflected well above the clavicle. The superior clavicular glands and the entire axillary contents except the great vessels, the nerve trunks, and the long nerve of Bell, should be removed by sharp dissection. It is well to remove the sheath covering the axillary vein. The pectoral muscles, the axillary contents, the breast, a liberal margin of overlying skin, and the fascia over the sheath of the upper portion of the rectus muscle should be removed *en masse*. Thorough lavage of the entire wound with warm physiologic salt solution does no harm and in my own opinion is helpful. Before the skin margins are approximated a soft Penrose drain is placed in the wound and pressure dressings are applied, which need not be disturbed for several days.

A liberal amount of overlying skin should be removed. Indeed, it is remarkable how large an area can be excised and primary closure still be secured. Occasionally relaxing incisions are helpful, and occasionally a split thickness skin graft is necessary. The latter procedure, however, adds little to the difficulties of the procedure. By the use of Paget dermatone a suitable graft can be secured and easily and quickly sutured into place.

Bleeding is sometimes troublesome and in the opinion of some surgeons is best controlled by coagulation of the vessels. I do not myself use this method, since I prefer to operate under cyclopropane anesthesia, which precludes the use of the cautery. My personal experience suggests that it makes little difference whether catgut, silk, or cotton is used for sutures and ligatures.

STERILIZATION

The work of Horsley and of others as to the desirability of sterilizing patients with carcinoma of the breast who are still menstruating seems to have important possibilities. About 50 per cent of the women with this disease have not yet reached the menopause, and my own experience, based, I admit, on a very small series of cases, suggests that the results are better if sterilization is affected either by oophorectomy or by application of deep roentgen rays to the ovaries. Like numerous other physicians, I believe that continued ovarian secretion is undesirable in a woman who has, or who has had, carcinoma of the breast.

PROGNOSIS

The prognosis of carcinoma of the breast is, of course, influenced by the grade of malignancy present: The higher the grade, according to the Broders' scale, the more serious is the outlook. During the past two years at the Vicksburg Hospital, of eighty-one women with carcinoma of the breast, four had grade 4 malignancy, forty-one grade 3, twenty-one grade 2, and twenty-five grade 1. The distribution is significant. But for my own part, I would consider the prognosis better for a woman with grade 4 cancer and no axillary involvement than for a woman with a grade 1 cancer if her axillary lymph nodes were involved. I have not, as I have said, had time to review my own record critically, but I feel safe in saying that over the past ten years not more than 25 per cent of the patients with axillary metastases have been cured by radical mastectomy by the standard criterion of freedom from residual or recurrent carcinoma at the end of five years, while 75 per cent of those without axillary metastases have been alive and well at the end of this period.

THE OUTLOOK FOR IMPROVEMENT IN RESULTS

I do not believe I am presumptuous in urging even physicians who are competent to establish the correct diagnosis of carcinoma of the breast in most of their patients, and who know well the dangers of delayed diagnosis and improper treatment, to lend all their efforts to improve the present unsatisfactory results in this disease. Women must be educated to submit to medical examinations at regular intervals. Physicians who are removed from hospitals and medical schools and contact with other physicians more fortunately situated must also be educated concerning neoplastic disease. Along those lines is the path to the reduction of the present high mortality of carcinoma of the breast.

We do not know the specific cause of cancer. We do not know that there is a single specific cause. It is in the realm of speculation whether a single or specific cure for the disease will ever be found. To investigate these possibilities is laudable. Eventually the endeavor may lead to success. But for the present, the thing to do is to use the knowledge and the means at hand. In carcinoma of the breast the course is clear. The patient's hope of survival depends upon two things, the establishment of an early diagnosis, and the prompt performance of radical mastectomy before axillary or other metastases have occurred.

The decrease in tuberculosis in the very young has led some to believe that, if we can rear a population free from tuberculosis infection, the problem of tuberculosis will be solved. No reasoning could be more unsound. There is plenty of evidence that young adults with negative tuberculin reactions can die from an infection acquired in adult life.

Contemporary Approaches to the Control of Tuberculosis*

JOHN B. HOZIER
New Orleans, La.

When I call your attention to a few facts on tuberculosis mortality in Mississippi, you will understand my special interest and pleasure in addressing you today. Tuberculosis control workers everywhere look hopefully at Mississippi's record, and particularly so in view of her difficult tuberculosis problem. I have studied this record, and I speak with the conviction that your state can be among the first to eradicate this dread disease.

In the United States in 1944, there were thirty-nine tuberculosis deaths per 1,000 deaths from all causes. In 1945 the ratio dropped to thirty-eight, a decrease of 2½ per cent. The state of Mississippi, over the same period, reported tuberculosis death ratios of forty and thirty-seven, a decrease of more than 7 per cent.

Now consider that the population of Mississippi is about equally divided into white and non-white, and that the rate of death from tuberculosis among the non-white population is at least three times the rate among the white.

This, we all know, is Mississippi's most serious tuberculosis problem; and the progress made recently against that problem commands attention and the highest praise.

But Mississippi, like many other states, must guard against a false sense of security, which could lead to dangerous reverses. And apart from this, Mississippi and the nation as a whole, in order to repeat their successes, must increase their efforts to control tuberculosis.

Large numbers of advanced cases have been isolated, and this has greatly retarded the spread of the disease; but the task ahead is more difficult. To continue our progress, we must discover and isolate more tuberculosis in the early, remediable stages. We must provide after-care and rehabilitation in larger measures than before, and protection of the afflicted family against economic distress. To help the states attain these objectives, the United States Public Health Service employs four major techniques: financial aid, demonstrations, research, and training.

And now I should like to discuss at some length the federal program of tuberculosis control—a subject, you will see, that does not lead us from the problem at the state level. Approaches to the general problem are essentially alike, whether made by the public health department of a state or the Tuberculosis Control Division of the United States Public Health Serivce.

Until July, 1944, when the Tuberculosis Control Division was established by an act of Congress, the campaign against tuberculosis in the United States was carried on largely by local health departments, and by voluntary agencies under the leadership of the National Tuberculosis Association. These organizations have courageously led the way in a nation-wide attack against the disease. They have been particularly important in educating the public and creating an awareness of the nature of tuberculosis. It soon became apparent, however, that agencies with official force were required to integrate and guide the more significant undertakings of the entire movement. The Tuberculosis Control Division is organized to perform these functions—to integrate and guide. But we are also prepared for active war against tuberculosis; and my discussion of the federal program will be confined now to descriptions of our four techniques for carrying on this war.

The first of these techniques or approaches, is an extensive grant-in-aid program. At the beginning of the federal movement, in 1944, grant funds were largely used to establish health department services to insure discovery of an increased number of early cases. Many states now offer chest x-ray service on a large scale, provide for the follow-up of discovered cases and patients discharged from sanatoria, and conduct programs of health education for the public. In nearly every state, grants-in-aid have helped in the establishment of full-time organizations that operate through a planned program of tuberculosis control.

In fiscal year 1946 the Division's total appropriation was $6,047,000, and $5,200,000 of that was allocated for grants-in-aid. This fund was used by the states for the purchase of equipment, recruitment and training of personnel, and case-finding and follow up activities. The states were able to add more than a thousand full-time workers to their tuberculosis control staff, and by the end of the year, forty-four of the states and territories had full-time tuberculosis control officers. The appropriation for 1947 was $7,994,000, of which $6,880,000 was allocated to the states. The Division had participated actively in state functions through consultations, demonstrations, and loans of professional personnel.

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*Read before the Section on Hygiene and Public Health at the annual meeting of the Mississippi State Medical Association, Biloxi, Miss., May 7, 1947.

To explain the second technique, I should mention that Congress has authorized the Tuberculosis Control Division to operate several x-ray units for purposes of demonstration. At the present time, we have about twenty of these units in operation. While demonstrating the value of the photofluorograph in tuberculosis case-finding work, the units provide direct service to the community. A central planning group in Washington, working in conjunction with the appropriate district office, directs and coördinates the activities of the entire demonstration force.

The importance of tuberculosis case-finding gained recognition as knowledge of the total problem grew. We have learned that we can never be successful in controlling the disease if we wait for symptoms to lead the patient to the physician. We must seek tuberculosis in apparently healthy persons to provide the necessary protection to the community and the best possible prognosis for the individual.

Repeated success has proved the mass x-ray survey to be an efficient, low-cost technique for discovering early tuberculosis. Within the past few years, millions of people throughout the world have had chest x-ray examinations, with the result that large numbers of infection-spreading cases have been discovered and isolated, and an accurate picture has been drawn of the tuberculosis problem in certain population groups. In demonstration surveys to date, the Tuberculosis Control Division has x-rayed over a million persons. Of those examined in medical and penal institutions, 4.2 per cent showed evidence of reinfection type tuberculosis. Among industrial workers, the incidence was 1.1 per cent; in schools and colleges, 0.6 per cent. And among the general population, when no attempt was made to reach all adults in a given area, the incidence was 1.2 per cent.

In areas where no industrial or other group deserves precedence because of a higher-than-average morbidity rate, chest x-ray surveys should be community-wide. The Division, in demonstrations of this kind, attempts to obtain a chest x-ray film of every community member fifteen years of age or older. Since November, 1945, the Public Health Service had participated in tuberculosis case-finding demonstrations in North Carolina and Georgia, where the coverage of entire counties, but the massing of a number of units in one area, was found to be highly successful.

I should mention that a case-finding demonstration—particularly a community-wide one—is not the work of a single agency. Experience has shown that many groups must plan together, each accepting responsibility for certain phases of the program. First, there are the state and local official health departments and other official agencies, such as welfare departments and vocational rehabilitation offices; then, the voluntary associations, state, local, and others. And, of course, these are the private physicians. In case-finding demonstrations on a community-wide basis, the Public Health Service contributes most of the necessary technical equipment and technical personnel.

In 1946, eleven of the Division's twenty demonstration units were lent to state health departments and four were lent to large cities. The remaining units traveled to conduct surveys upon request, throughout the United States. Demonstration work is steadily expanding. As a coöperative enterprise with state agencies, it will be active in all aspects of tuberculosis control especially in consultation service, study of methods and procedures, and collection and analysis of data.

The Division includes socio-economic studies of tuberculosis among its demonstration activities. An example would be the recent analysis of data from the Altro Workshop in New York City, to determine the cost of returning tuberculous workers to industry. In 1946 the cost of tuberculosis to families and communities was investigated, with Montgomery County, Maryland, as a pilot area. Other examples of the application of the demonstration technique are the surveys of accounting systems in tuberculosis hospitals in Michigan, Minnesota, and Wisconsin; the analysis of the need for additional tuberculosis hospital beds in Missouri, Georgia, and Florida, and the survey to determine the amount of state and local public health funds appropriated or expended for tuberculosis control.

Research, our third approach to the problem, includes attempts to improve the other three techniques—aid to states, demonstrations and training. Some of our investigations have attracted wide attention, stimulating research along similar lines in non-federal organizations; and I'd like to say a few words on these projects that are of particular interest and importance.

The most extensive research project of the Division has been the study of minimal tuberculosis among student nurses. The Nurses Study was initiated in 1943, in coöperation with the Medical Research Committee of the National Tuberculosis Association, and was gradually expanded to include research in almost all the geographic regions of the United States. Approximately 11,000 student nurses in seventy-six widely distributed schools are systematically x-rayed and skin-tested to determine the predisposing factors and earliest manifestations of tuberculosis.

We feel that one of the most significant phases of the study is the investigation of non-tuberculosis pulmonary calcification, which has led to a study of certain fungus diseases, such as histoplasmosis. Dr. Carroll E. Palmer of our Division announced the first results of the investigation in *Public Health Reports,* May 11, 1945. It was demonstrated that a mild, subclinical condition, associated with sensitivity to histoplasm, is widely prevalent in certain states and relatively infrequent in others. In general, those states in which the frequency of reaction to histoplasm is high are those in which pulmonary calcification in negative reactors to tuberculin is high. The conclusions are, that a large proportion of the calcification observed in roentgenograms of the chest is due not to tuberculosis, but probably to the agent producing histoplasm sensitivity. Subsequent studies have confirmed these conclusions, and have markedly improved the identification of pulmonary lesions.

A field station was set up in Kansas City to further the epidemiology of histoplasmosis and to study its relation to tuberculosis. About 15,000 school children in Kansas City, Missouri, have been x-rayed and tested with histoplasm and tuberculin—the first step in a coöperative study with the city health department, the board of education, and the tuberculosis association. A number of significant reports have been published and clinical follow-up work is progressing among children, industrial workers, and others tested who show evidence of pulmonary disease. During 1946, one radiologist of the Division read more than 100,000 x-ray films of the chest, in connection with the Nurses Study and the Kansas City field station activities.

Recently, the Tuberculosis Control Division of the Office of Indian Affairs, Department of the Interior, published the results of a six-year controlled study of BCG vaccination among 3,000 American Indian children. The findings indicated that marked protection against tuberculosis was afforded by the vaccine.

On September 7, 1946, a conference on BCG vaccination was held in the offices of the Division, with representatives from seven states, Denmark and China. The consultants agreed that the vaccine should not be made commercially available at present, and went on record as favoring a long-term, controlled study of BCG. It was recommended that extensive investigation be carried on in coöperation with research organizations throughout the country during the coming years, especially in population groups highly exposed to tuberculosis.

Last month a controlled program of BCG vaccination among school children was begun in Columbus and Muscogee County, Georgia. As a first step, the children were tested for the presence of tuberculosis infection by means of the tuberculin test, and only those whose tests showed that they had not been infected were vaccinated. These totalled about 4,500 children, white and non-white. Three Public Health Service teams, each composed of a doctor, nurse and clerk, administered the tests and then the vaccine. It will be several years before the results are known, of course; but we can say now that the study to date has been very successful; and this we attribute mainly to the earnest coöperation of the city and county school boards, PTA's, the county medical society, and the state and local health departments. Within the next few years, the Division will be prepared to make recommendations for the use of BCG.

I could describe briefly some other significant projects that have drawn considerable notice in professional circles. In coöperative studies with the Rockefeller Institute for Medical Research, a medium was developed that supports diffuse and rapid growth of small inocula of tubercle bacilli. It has been used successfully in the diagnosis of tuberculosis meningitis. Other investigations at the Institute have led to the isolation of a harmless plant substance that retards the development of tuberculosis in guinea pigs. Early in the year, the first results of this study appeared *Public Health Reports,* under the title "A Crystalline Antibacterial Substance from *Ramalina Reticulata.*" The Division has made preparations for a thorough testing and evaluation of these two materials—the culture medium and the antibiotic.

Last year the Division undertook a study of films used in mass radiography, to determine the relative value of each for certain purposes; and a board was established to study the radiograph, with a view to revising and developing methods of interpretation. A great deal of statistical work supplements our laboratory and clinical investigations. Statistical studies of tuberculosis mortality and morbidity continue, in coöperation with the National Tuberculosis Association and the Division of Vital Statistics.

But now I must turn from the subject of research to say a few words on our fourth major technique—training. The Tuberculosis Control Division conducts an extensive training program for medical officers, nurses, photofluorographic operators, and record analysts. This program will be greatly expanded in fiscal 1948, in order to relieve the continued shortage of trained workers in tuberculosis control. I should point out that this shortage is rapidly becoming acute, and may seriously delay the entire control movement, unless all available resources are used to increase the national training program. To this end, federal grants to states and other public health funds must be applied in greater measure than ever before. Because of the time required to train skilled personnel, we must make our plans now if we are to affect substantially the situation ten years hence.

These are a few of the activities and achievements of the federal agency for tuberculosis control in the United States. That agency has as its first function the planning of a decisive and concentrated attack to obtain four objectives: *first,* the discovery of every person in the country infected with tuberculosis; *second,* isolation and medical care for every patient needing treatment; *third,* after-care and rehabilitation; and *fourth,* protection of the affected family against economic distress.

Guidance is the principal role of the federal agency in state and local tuberculosis control work. It is the practice of the Division to withdraw from active participation in the state program as soon as adequate control measures are established, and to serve mainly through financial aid and research.

Although reported figures show that tuberculosis mortality is on the decline, many grave problems confront us in the fight against the disease. The Tuberculosis Control Division is organized to assist all persons and agencies engaged in that fight. It will continue to conduct research, and to provide aid to states through financial grants, training, and direct service to communities. As the states develop smoothly operating programs, the target of the federal attack will change, until every state and community is prepared to wage successful war against tuberculosis.

In the solution of the problem of tuberculosis the fullest coöperation of an enlightened public opinion is urgently needed. Any community with pride in the health of its citizens; with a compassion for those who, through no fault of their own, become ill; and with sure justice for those recalcitrants who knowingly endanger others can go far in the struggle against the tubercle bacillus. The crucial battle has barely begun. Let us see it through to success.

Foreign Bodies of the Air and Food Passages*

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When some unfortunate individual breaks his leg or his nose, no one except those intimately connected with the case exhibits much interest in the matter. When, however, a child aspirates a toy or a peanut, or an adult swallows his false teeth or a bone, the general public as well as the members of the medical profession become very curious to learn all the details, including the outcome of the accident.

Etiological Factors

Foreign bodies of the air and food passages may occur at any age; but in general those of the air passages occur in children, while those of the food passage are found either in children or in adults of the denture-wearing age.

Children are prone to put any object at hand into their mouths and in consequence may aspirate or swallow such objects. Denture-wearers not feeling the presence of a foreign body in their food while it is in the mouth, are likely to detect its presence only after it has passed the posterior limit of the denture, when it is then sometimes too late to avoid its descent into the esophagus. Often enough sheer carelessness on the part of an adult is responsible for the ingestion of an unusually large piece of tough meat which will not pass through the esophagus. Occasionally food impaction is due to stenosis of the esophagus as the result of tumor or other disease. Rarely, open safety pins or pieces of jagged metal are swallowed with suicidal intent. Why women who are in the habit of filling their mouths with pins and needles while sewing, do not aspirate or swallow more of these objects than they actually do, will always remain a mystery.

Foreign Bodies of the Air Passages

Aspirated foreign bodies may lodge in the larynx, the trachea, or at various levels in the bronchial tree, where they produce partial or complete obstruction to the passage of air. Over and above the simple effect of mechanical obstruction, vegetal foreign bodies frequently set up an intense local reaction which is soon followed by pneumonitis and high fever.

When a reliable history can be obtained a diagnosis from this alone is usually possible. A child, known to have some foreign object in its mouth, who gasps, chokes, wheezes, and coughs with or without associated cyanosis, has undoubtedly aspirated the foreign object. If it is not known whether some foreign object was present in the mouth prior to such an episode, the sequence of symptoms just described should arouse a strong suspicion of aspiration. There will be some cases in which the initial symptoms of choking preceding wheezing and coughing will not have been observed. Finally, as in the case of straight pins, there may be no initial symptoms. Following the initial episode there may be a period in which there are no symptoms but in time, and depending on the size and character of the foreign body, progressive bronchial obstruction, atelectasis, drowned lung and abscess develop. In the case of older children and adults the history is usually sufficient to establish a strongly presumptive diagnosis.

The physical signs vary in proportion to the degree of obstruction existing at the time of examination. Briefly, they may show limited expansion, decreased vocal fremitus, impaired percussion and distant or absent breath signs. Rales are often present.

X-ray examination is advisable in all cases in which there is a suspicion of tracheobronchial foreign body. A foreign body which is opaque to the x-ray will then, of course, be readily detected. Unfortunately, many aspirated foreign bodies are not opaque to the x-ray and it is regrettable that many a mother is assured by her physician, who exhibits clear x-ray films of the chest, that her child has a mild case of tracheobronchitis when in effect the trouble is due to an aspirated foreign body.

In the case of radiolucent foreign bodies of the air passages, x-ray examination may show definite evidence of obstructive emphysema or obstructive atelectasis but unless a radiologist trained in the technic and interpretation of full inspiration and full expiration films is available, it is dangerous to rely on roentgenographic information. Chevalier Jackson has often stated that all that wheezes is not asthma. This is certainly true; and while all non-asthmatic wheezing is not due to tracheobronchial foreign bodies, such wheezing or any other evidence of obstruction should be investigated by bronchoscopic examination, which is an entirely safe and non-traumatizing procedure.

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*Read before the Section on Eye, Ear, Nose and Throat at the Seventy-Ninth Annual Session of the Mississippi State Medical Association, Biloxi, May 6, 1947.

Foreign Bodies of the Food Passages

The entrance of a foreign body into the esophagus is usually ascertained from the history but it is not always easy to know whether the foreign body has been vomited up, remained in the esophagus, or passed down into the stomach. Undoubtedly many young children swallow foreign bodies and no one ever knows about them; but when even an infant swallows a foreign body sufficiently large to become arrested in the food passage, the accident is more likely to be observed than in the case of air passage invaders. Older children and adults will always know when they have swallowed a foreign object.

Initially, there is usually choking and gagging; and there may also be laryngeal spasm with a wheeze or two if the foreign body is bobbled in the pyriform sinus. The most frequent site of arrest is at the level of the cricopharyngeus, or upper end of the esophagus. At this level, local discomfort or actual pain is present and it may persist for a time even after a temporary arrested foreign body has passed farther down in the alimentary canal. Foreign bodies low in the cervical esophagus or in the thoracic portion usually cause no symptoms unless they produce a high degree of obstruction or unless by prolonged pressure they cause ulceration and consequent mediastinal involvement. Children who swallow coins and such unimpressive foreign bodies are generally expected to pass them by rectum; and adults are inclined to have unlimited faith in their ability to do the same. It must be admitted that this is often accomplished. Because the propelling force of a soft, bulky food mass has sometimes dislodged an impacted foreign body, this expedient is resorted to by all grandmothers and not a few physicians. The result is sometimes happy; sometimes it only adds to the difficulty of extraction; and sometimes it contributes to the serious complication of perforation of the esophagus.

Once it has been determined that a foreign body has been swallowed, and particularly when local discomfort persists, it is important to discover, if possible, whether the foreign body has become arrested in the esophagus. If the foreign body is opaque to the x-ray this method of investigation is certain to give the desired information. Surprising as it may seem, fish bones, small bones of fowls, and even some fragments of veal bones, are not always opaque to the x-ray and in such cases radiographic examination is not reliable. When it is certain that a foreign body has become arrested in the esophagus, or when this circumstance is doubtful, the only safe procedure is esophagoscopic examination.

Important Points in X-ray Examination For Foreign Body

Before concluding the didactic portion of this presentation, I should like to call your attention to two important points in roentgenographic examination for foreign bodies such as coins, buttons, and safety pins that enter the air passages. If they do so in the sagittal plane they usually remain in this plane in their descent. When such foreign bodies enter the food passage in the coronal plane they usually remain in this plane in their descent as far as the stomach. Second, x-ray examination for foreign bodies, especially for those which are known to be radiopaque, should cover the area between the base of the skull and the ischial tuberosities before it can be concluded that the foreign body has not lodged somewhere between the vault of the nasopharynx and the rectum.

CASES

I should now like to present a few cases of foreign body of the air and food passages which I think illustrate important points in their diagnosis and management.

Case 1. A soldier in an intoxicated state was knocked unconscious by a blow from an unknown source. The next morning, when he regained full consciousness, his mouth was severely contused and he missed the denture he had been wearing.

Nine days later he had a short paroxysm of coughing. Three days later he began to cough again. This time the cough persisted and he often brought up blood-tinged mucus. The cough continued until the twenty-sixth day following the accident, when he developed

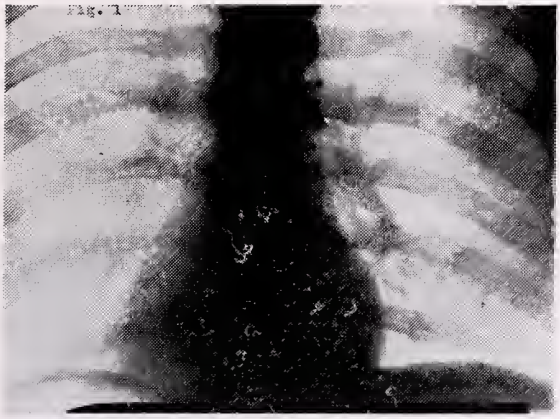

FIG. 1. (Case 1). In the A.P. projection it may be assumed that the foreign body is in the tracheobronchial tree (right bronchus) because of its position away from the midline.

fever and physical signs of pneumonia. X-ray examination confirmed the diagnosis of pneumonia but it also showed the presence of a wire-like metallic foreign body along the right side of the superior mediastinum. The foreign body was considered to be bridgework in the right primary bronchus.

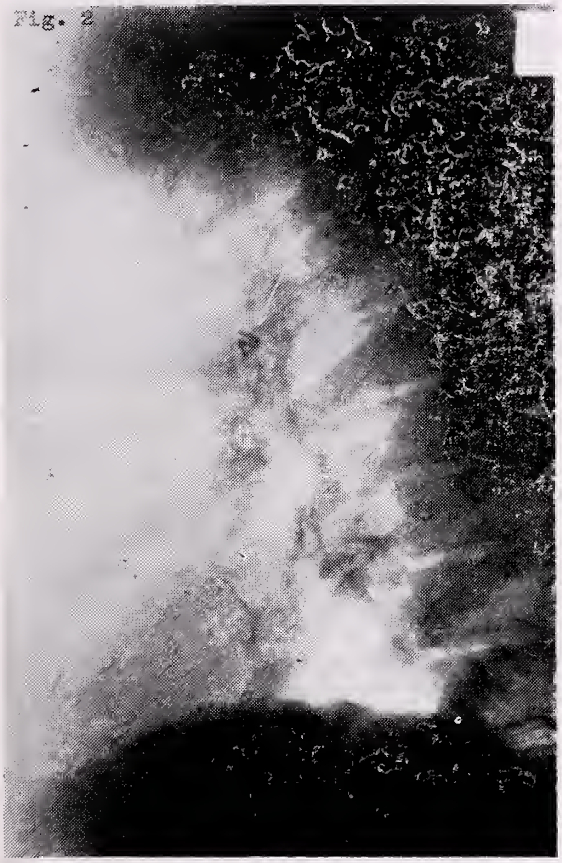

FIG. 2. (Case 1). In the lateral projection the foreign body is definitely located within the confines of the tracheobronchial system.

Bronchoscopy under local anesthesia was performed. The wire was easily located but because of the size of the acrylic denture fixed to it, the foreign body could not be delivered through the larynx. Two days later, under deep inhalation anesthesia, bronchoscopy was repeated. Since even with complete relaxation the foreign body could not be made to pass through the larynx, tracheotomy was performed and the foreign body, still in the grasp of the bronchoscopic forceps, was brought to the tracheostomy where it was easily delivered. Recovery was uneventful.

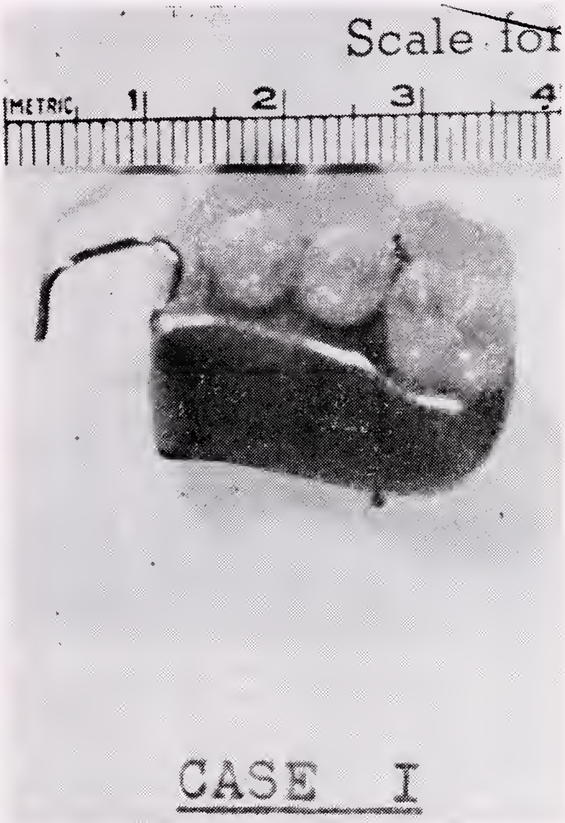

FIG. 3. (Case 1). Unusually large tracheobronchial foreign body.

In this case the history may have been difficult to evaluate but the story of a missing denture after a violent blow to the face which caused unconsciousness, followed by cough and hemoptysis, should have aroused the suspicion of foreign body aspiration. If there were not other unusual features in this case, the size of the foreign body alone would make it interesting to me. It is the largest bronchial foreign body I have ever seen and the problem of extraction was very taxing.

Case 2. A male, twenty-one years old, awakened one morning with considerable pain in the right side of his chest. He vaguely remembered that during the night he had had a spasm of coughing. On looking at a denture he had been wearing, he noticed that a fragment of considerable size was missing. The denture had been cracked some time before but he continued to wear it even during sleep.

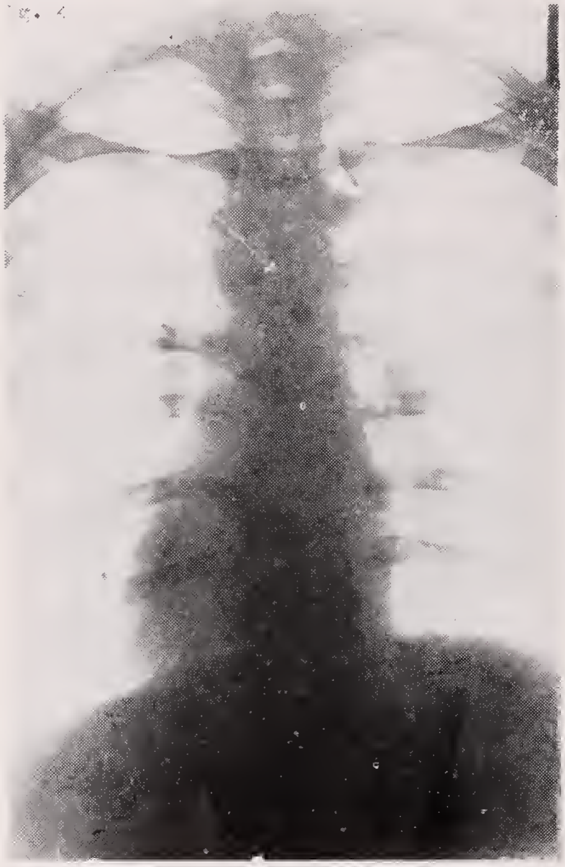

FIG. 4. (Case 2). A.P. projection shows only the metallic portion of the foreign body. From this projection it is not possible to determine whether the foreign body is in the air or food passage.

AP and lateral films of the chest were reported as follows: ". . . films show two metallic densities at the bifurcation of the trachea. One measured about 1 cm. in length and is somewhat coiled. The second is about .5 cm. in length and appears to be attached to an object the shape of a tooth." On examining the films it was apparent to me that the foreign body was in the esophagus and not in the tracheobronchial tree. Esophagoscopy was therefore perfomed and the missing fragment of the denture was located and extracted.

The only interesting feature in this case is the x-ray diagnosis of foreign body in the air passage. This diagnosis was made by radiologists of considerable experience and had it been accepted without consulting the films an unnecessary bronchoscopy would have preceded the necessary esophagoscopy.

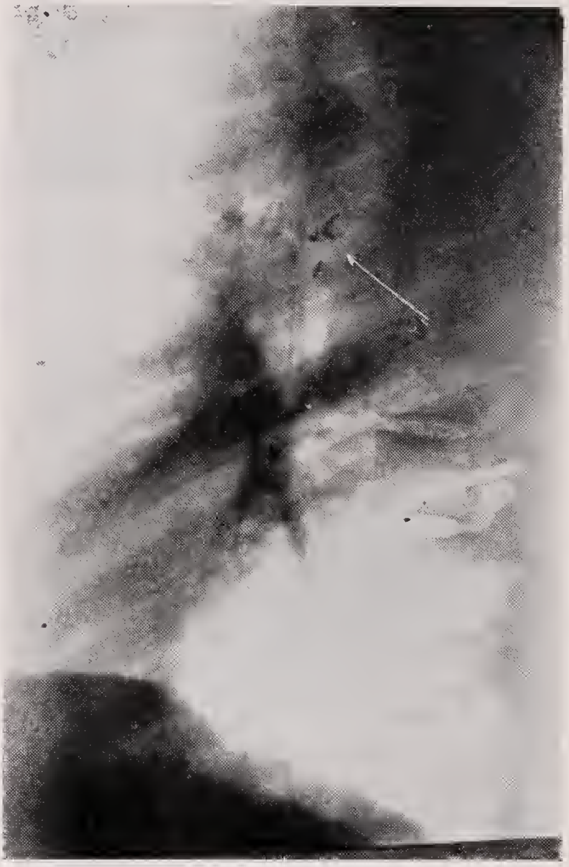

FIG. 5. (Case 2). In the lateral projection the foreign body is unmistakably located posterior to the outline of the tracheobronchial system; it must be in the esophagus and not in the bronchus. (Compare with Fig. 2).

Following are five cases of foreign body trauma to the esophageal wall with resulting periesophagitis. All of the patients recovered under conservative management. In the days before sulfonamide and penicillin therapy, cases of this type were always regarded with apprehension and there were many who felt it was advisable to institute early external drainage in order to prevent the development of spreading mediastinitis. While periesophagitis is always serious,, or potentially so, the sulfonamides and penicillin have greatly reduced the morbidity and mortality attending it.

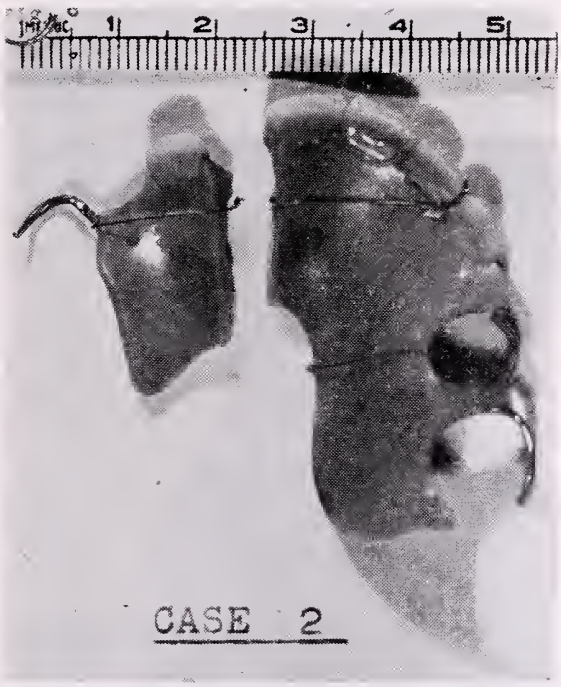

FIG. 6. (Case 2). The foreign body is the smaller of the two fragments.

Case 3. A thirty-six-year-old male swallowed a beef bone. He was seen four days later, at which time his neck was red, swollen and tender. He had fever and leukocytosis and was dehydrated. At esophagoscopy the bone was found at the cricopharyngeus. The mucosa was markedly edematous and a foul odor was present but there was no frank pus. The foreign body was removed and the patient was given sulfathiazole and intravenous fluids. He was discharged symptom-free four days later.

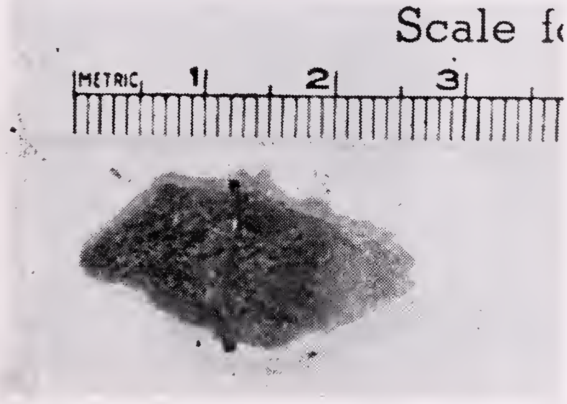

FIG. 7. (Case 3). Photograph of the foreign body. No roentgenograms were made in this case.

Case 4. An edentulous, denture-wearing female, sixty-nine years old, swallowed a beef bone. She was seen three days after the accident. There was great difficulty in swallowing; the neck was swollen and tender but not red. She was markedly toxic and dehydrated. Fever and leukocytosis were present. Roentgenograms showed a foreign body at the cricopharyngeus and evidence of periesophagitis. At esophagoscopy the bone was found at the cricopharyngeus. Foul smelling frank pus was present. The foreign body was removed and the patient given penicillin and intravenous fluids. She was discharged symptom free in four days.

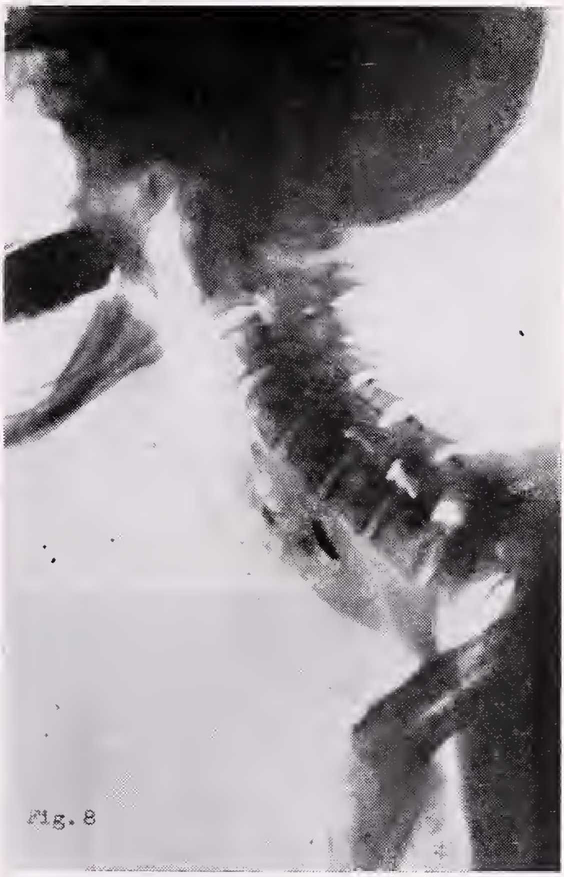

FIG. 8. (Case 4). Lateral projection show densely opaque foreign body (beef bone) at cricopharyngeal level. There is distention of the soft tissues (periesophagitis). Air is present in the tissues.

Case 5. An edentulous, denture-wearing female, sixty-five years old, swallowed a chicken bone. She was seen three days later, at which time she was unable to swallow anything. The neck was tender but not swollen or red. She was dehydrated and febrile. Roentgenograms showed a foreign body at the cricopharyngeus and evidence of periesophagitis. At esophagoscopy foul-smelling frank pus was present at the site of the foreign body. The foreign body was removed and the patient given penicillin and intravenous fluids. She was discharged symptom free four days later. Here is a case

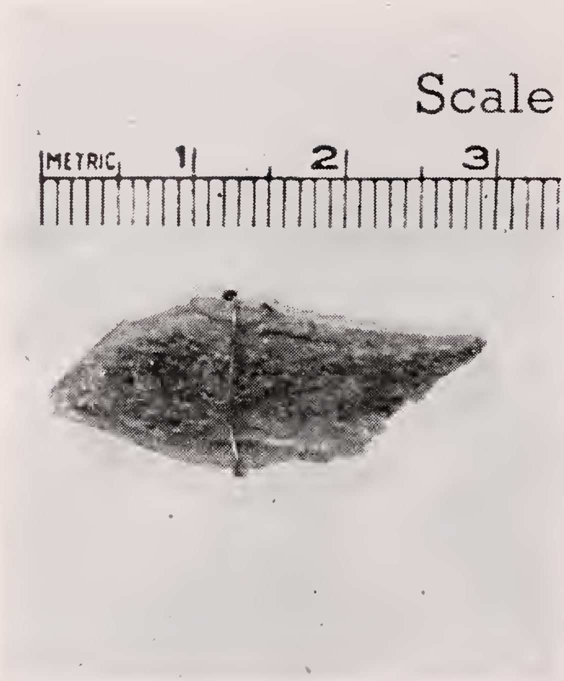

FIG. 9. (Case 4). Foreign body (beef bone) very similar to Case 3.

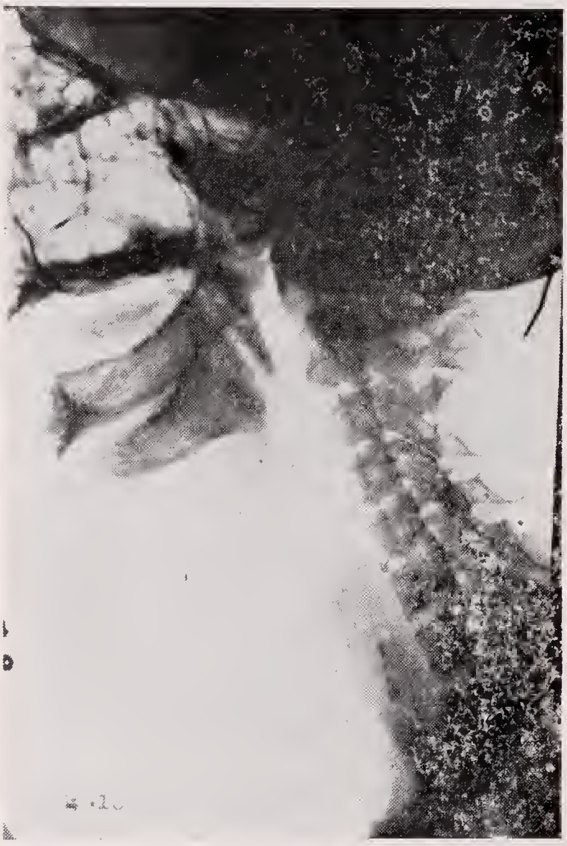

FIG. 10. (Case 5). Lateral roentgenograms shows foreign body (chciken bone) low in cervical portion portion of the esophagus. Slight distension of the soft tissues is present.

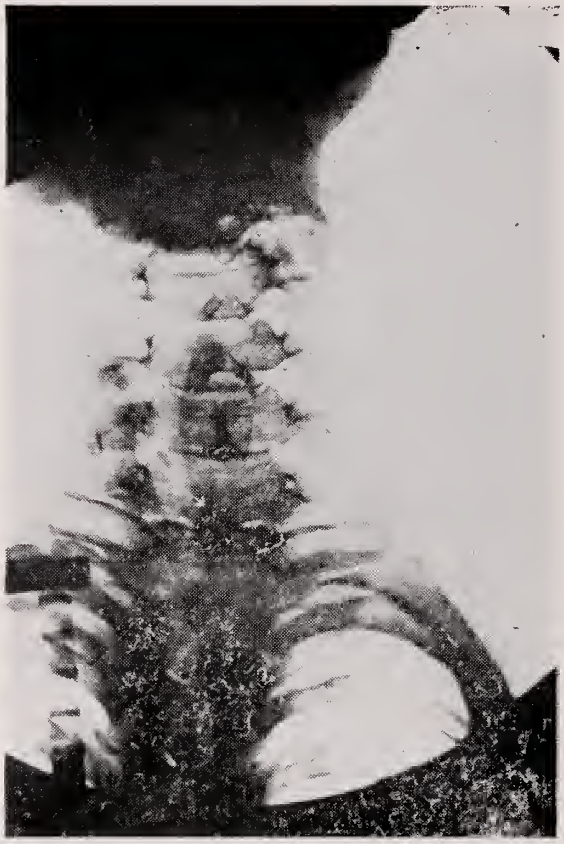

FIG. 11. (Case 5). A.P. view shows the foreign body but not to the same advantage as in preceding figure.

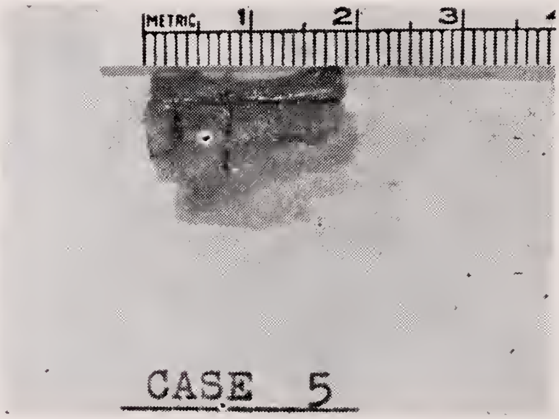

FIG. 12. (Case 5). Longitudinally cracked section of chicken femur.

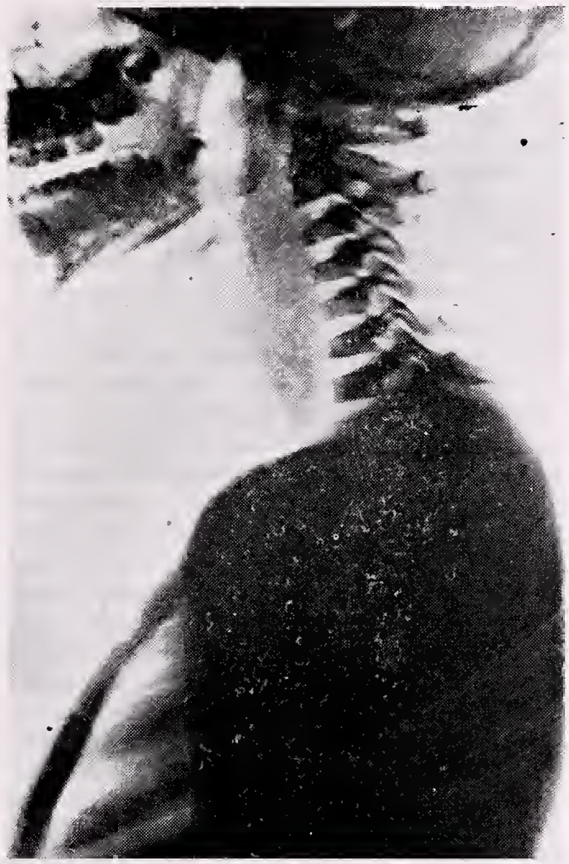

FIG. 13. (Case 6). No foreign body is demonstrated but distension of the soft tissues (periesopageal abscess is clearly evident.

of chicken bone which was definitely radiopaque. The femur of a chicken is composed of fairly heavy bone and casts a shadow on x-ray examination; but the same is not true of rib bones or sternal cartilages.

Case 6. A twelve-year-old-boy is presumed to have swallowed a chicken bone. He was seen five days later. The neck was swollen but not tender. Roentgenograms showed evidence of periesophagitis but no bone was demonstrated. At esophagoscopy no foreign body was located but suppuration—about 15 cc. of pus—was found. The pus had no odor. The patient was given penicillin and intravenous fluids. Fever and leukocytosis persisted. A second roentgenogram showed no reduction in the distention of the periesophageal tissues and external drainage was contemplated. A second esophagoscopy was performed six days after the first. No suppuration was encountered. The patient left the hospital before all evidence of toxicity had subsided. Subsequent inquiry two weeks later revealed that recovery was complete. In this case a foreign body had unquestionably become temporarily arrested at the cricopharyngeous and produced trauma which was followed by periesophagitis.

Case 7. A healthy, robust male, thirty-two years old, swallowed a beef bone. He was seen four hours later. The neck was tender but not red or swollen. X-ray examination showed a foreign body at the cricopharyngeus. No roentgenologic evidence of periesophagitis was present. At esophagoscopy fresh blood surrounded the foreign body. The foreign body was removed and the patient given penicillin and intravenous fluids. The following day the temperature was 100° and there was pain in the region of the right clavicle. Roentgenograms of the chest showed possible slight atelectasis of the right upper lobe. All symptoms subsided two days later. Subsequent x-ray films of the chest were clear and the patient was discharged on the fifth postoperative day. This is a case of esophageal trauma with early removal of the traumatizing agent and prompt recovery without significant infection.

DO YOU KNOW WHAT BOLSHEVISM REALLY IS?

In Russia no one can own a foot of land, no one can hire another to run even a cobbler's shop, a cigar store or a filling station.

In Russia there is only one employer. The State. You work for it—or starve. You can't change your job or residence unless it permits you. You take the job it gives you—and like it.

The Mississippi Doctor

Published monthly at Booneville, Mississippi.

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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INSURANCE

The matter of hospital insurance and even limited insurance on sickness is now before the doctors and the people of the state. The Blue Cross Insurance has rapidly spread throughout the nation, members now numbering twenty-five to thirty millions. It has served a great purpose. In principle it means that a person can pay a small amount at a time and be prepared when an emergency comes. The person who keeps well also helps to pay for the sick. This is not a poor plan, for, after all, we are our brother's keeper. Insurance can be quite well applied to some types of illness, most generally surgical cases. The populace is becoming insurance minded and as time goes on its service will be broadened. As our hospital system progresses insurance will become more popular. We think Mississippi should go forward without further delay with hospital insurance and even embrace, cautiously, insurance for the doctor's bill also.

§

The Mississippi State Hospital Association is to meet in Jackson at the Robert E. Lee Hotel on October 16, 17, 18. This should and no doubt will be the most important meeting in the history of the hospital association. Our state is on the way to a fine hospital system that will enable all the people of the state to be served provided all the doctors and all the hospital administrators work to this end. The success of the hospital is very largely dependent upon the doctors, but hospital owners and operators are also important. Multiplied hospital problems will no doubt come up at the next meeting of the hospital association. It is very important for many doctors to attend and take part in the discussions. Under the system Mississippi is to have, every hospital will be a component part, with an important obligation. There is no need for discord between hospitals or doctors, as much medical service as the people of our state is needing. Our hospitals must be a means to better medical service to the people, and they must also serve as educational centers for the training of nurses and doctors, and also as centers for postgraduate work and consultations for doctors. If Mississippi is to be well-served with doctors and nurses at an early date it will be largely by the nurses who receive their training in our own hospitals, and the same may be said for doctors. The nurse who trains in the small hospital for two years and in the larger hospital for one year will be the best all-'round bedside nurse, and the intern who serves at least half of his time in a small hospital, say of fifty beds, will the best doctor for our people. Indeed, he will be more available than one trained for a few hours service each day.

The time is at hand for the rank and file of doctors of the state to take an interest in our hospitals, to help solve their problems and keep them ahead in progress. Make your plans to attend the Hospital Association in Jackson in October.

§

There was much sadness over the state when Dr. W. C. Walker of Houlka passed to his reward. There was a love of humanity in his heart, oratorical power in his tongue, and inspiration in his personality. It did his soul good to relieve the pains of the sick and to build a good citizenship with strong health assets. Measured in service according to the Book he was a great man. We are glad he passed our way.

Dr. W. C. Walker is dead. He was the oldest member of our clan. He was eighty-eight years old. He was born and reared in Chickasaw County where he spent his entire life, having practiced medicine in that county for over sixty years. He was a splendid character and a very unusual type of man. He had the capacity to draw people, both men and women, to him. Consequently he had hosts of friends. He enjoyed adulation and praise. Who of us does not? Had Dr. Walker lived when "knighthood was in flower" he would have fitted quite well into the times. He was a very fluent speaker and was much in demand as an after dinner speaker. He entertained the Northeast Mississippi Thirteen Counties Medical Society in Houlka, his home, on his eightieth birthday. A most bounteous banquet was served this large assemblage of doctors and their families. Governor and Mrs. Hugh White were honor guests, the banquet being served on a table built for the occasion under some beautiful shade trees. The food was contributed by friends and old patients. Over two hundred chickens were given Dr. Walker by his negro friends whom he had served for many years. Perhaps he had received little or no pay for these years of faithful service. Dr. Walker officiated at the birth of many hundreds of citizens of Chickasaw County. Among these might be mentioned several doctors who are eminent in their profession today. Dr. Walker did not acquire a great deal of this world's goods, but he was a very wealthy man, his wealth consisting largely of friends which he had drawn to him during a long and useful life. Would that more of our younger medical men had a vision, as Dr. Walker did, to serve their fellowmen in their sickness and distress, in this era when less service and more pay is the goal and slogan of too many men and women.

A good man has fallen. Peace to his ashes; honor to his memory. May his sleep be sweet, his tired body at rest.

G.S.B.

News and Comment

MEDICAL FILMS AVAILABLE

Believing that professional motion picture films can be of great value in bringing to practitioners and to medical students the advance in medical knowledge, the Academy-International of Medicine has had compiled a list of the films now available, indexed by topics, and including the source from which they may be obtained by the borrower.

As a service to the profession the Academy is offering to mail, upon request, to any member of the Mississippi State Medical Association, a complimentary copy of the AIM Medical and Surgical Film Catalogue. Requests should be addressed to: Academy-International of Medicine, 214 West Sixth Street, Topeka, Kansas.

MISSISSIPPI STUDY OF CHILD HEALTH SERVICES, AMERICAN ACADEMY OF PEDIATRICS

Factual material which the American Academy of Pediatrics has been gathering in Mississippi has reached a successful harvest.

The full coöperation of all hospitals in Mississippi has made possible the collection of important information concerning facilities available for the treatment of children in our medical institutions. All health services made available through state, county, and voluntary organizations have been accurately reported by representatives of these groups throughout the eighty-two counties of the state. Information on medical and dental care rendered by physicians and dentists in private practice has been faithfully contributed by 88 per cent of the physicians and 85 per cent of the dentists. Specialized services rendered to children have been recorded by all pediatricians in Mississippi.

The listing of these health resources has been accomplished. But facts in themselves are inert! They can be activated into effective use only in proportion to the enthusiasm and farsightedness of those who plan for a "picture of health" for Mississippi youth!

ANNOUNCEMENTS

Dr. J. M. Faust announces the association with Dr. H. D. Chipps in the practice of dentistry, Liddon Building, Telephone 60, Corinth, Miss.

*****

We desire to announce to the medical profession the association of Dr. James L. Spencer, Jr., (practice limited to internal medicine), with Drs. Long, Dees and Edwards Clinic, 733 North State Street, Jackson, Mississippi.

THE BALTIMORE MEETING

November 24, 25, 26

Upon the invitation of the Baltimore City Medical Society, the annual meeting of the Southern Medical Association will be held there during Thanksgiving week of this year.

In Baltimore was developed much of the fundamental work of this century in breast surgery, herniorrhaphy, brain surgery, thyroid, stomach, gynecologic, urologic, plastic, and heart surgery, not to mention such discoveries as epinephrine, and the numerous other invaluable progressive steps in internal medicine and the basic sciences of pathology, anatomy, histology, pharmacology, physiology and biochemistry. Physicians meeting there cannot but be inspired by the memory of great medical contributions, past and current.

The meeting this year will be concentrated into three days instead of three and one-half. Registration will open Monday morning, November 20, at 8:30 with the program for that day conducted by the local profession. The twenty-one sections of the Association will hold their meetings on Tuesday and Wednesday, November 25 and 26. Registration, the majority of the meetings and the scientific and technical exhibits will be found at the Fifth Regiment Armory on Hoffman Street. Other meetings will be conducted at the home of the Medical and Chirurgical Faculty of Maryland and the Baltimore City Medical Society, 1211 Cathedral Street, two and one-half blocks from the Armory.

Hotel reservations should be made through the Hotel Committee, Southern Medical Association Meeting, 1714 O'Sullivan Building, Baltimore 2, Maryland. The hotels will make no reservations directly with physicians, but will take them only from the Committee. First class hotels which will furnish rooms for the meeting are: the Altamont, Arundel, Biltmore, Congress, Emerson, Lord Baltimore, Madison, Maryland, Mt. Royal, New Howard, Sheraton Belvedere, Southern and Stafford. Persons who plan to attend the meeting should make their reservations immediately through the Hotel Committee.

The Clinical Sessions and the Sections for Baltimore will meet at follows:

Monday, November 24. *Forenoon and afternoon*—General Clinical Sessions, Baltimore Day, medicine, surgery, and ophthalmology and otolaryngology, presentations by physicians of Baltimore. A General Public Session will be held at the Lyric Theater on Monday evening.

Tuesday, November 25. *Forenoon*—Section on Gastroenterology, Section on Neurology and Psychiatry, Section on Orthopedic and Traumatic Surgery, Section on Urology, Section on Industrial Medicine and Surgery, and Section on Medical Education. *Afternoon*—Section on Medicine, Section on Ophthalmology and Otolaryngology, Section on Surgery, Section on Obstetrics, Section on Physical Medicine, and Section on Public Health.. A General Public Section featuring the address of the President followed by the President's Reception and Ball will be at the Lord Baltimore Hotel on Tuesday evening.

Wednesday, November 26. *Forenoon*—Section on Pediatrics, Section on Dermatology, Section on Radiology, Section on Gynecology, and Section on Anesthesiology. *Afternoon*—Section on General Practice, Section on Allergy, Section on Pathology, Section on Proctology, and Section on Ophthalmology and Otolaryngology.

The officers of the host society and Committees for the Baltimore meeting are:

BALTIMORE CITY MEDICAL SOCIETY

President—Dr. C. Reid Edwards.
Vice-President—Dr. Edwards A. Park.
Secretary—Dr. Lewis P. Grundy.
Treasurer—Dr. J. Albert Chatard.
Director—Dr. Walter N. Kirkman.

NORTHEAST MISSISSIPPI SOCIETY

The autumn meeting of the Northeast Mississippi Medical Society will be held at the University of Mississippi, Thursday afternoon. October 9, at two o'clock. Secretary W. H. Cleveland of Tupelo announces that there will be the annual business session for electing officers and selection of meeting places for the coming year. The program offers:

Dr. George Reid, Jackson, Typhoid Carriers

Dr. J. V. Reese, University, Richettsial Diseases

Dr. W. H. Anderson, Booneville, Caesarean Section

Dr. Paul Gamble, Greenville, Carcinoma of the Gallbladder.

Dr. Gamble, president of the Mississippi State Medical Association, will also bring greetings and discuss problems before the state organization.

AWARDED SCHOLARSHIPS

Thirteen awards were approved by State Medical Education Board in session in July. Ten of these students are veterans of World War II. Five are married. Medical schools in which these students will be enrolled this fall are: University of Mississippi, Tulane, Emory, and Vanderbilt.

Names and addresses of the awardees:

Shed Hill Caffey, Jr., Columbus; Edmond J. Daly, Philadelphia; Worth I. Dunn, Winborn; Joseph L. Guyton, Blue Mountain; Jack W. Hollingsworth, Bude; Wermit D. Laird, Bassfield; Thad Matheny, Route 2, Waynesboro; Byron A. Mayo, Pontotoc; Doyle P. Smith, Perkinson; Edsel F. Stewart, Osyka; George H. Temple, Jackson; Frank M. Wiygul, Jr., Shannon; and Gottrell H. Wright, Route 1, Merigold.

All awardees under the medical education scholarship loan program are preparing to enter early practice in the rural areas of Mississippi.

STATE HYGIENIC LABORATORY

We have just been advised by the Communicable Disease Center, United States Public Health Service, Laboratory Division, that the Virus Laboratory located at Montgomery, Alabama, is prepared to perform tests on specimens to determine the presence of virus infections.

Special procedures must be used in shipping these specimens.

Any physician desiring the services of this laboratory should communicate with Miss Beatrice Howitt, United States Public Health Service, Virus Laboratory, Montgomery, Alabama. Miss Howitt will furnish special instructions for preparation and shipment of the specimens.

H. C. RICKS, M.D., Director.

Deaths

DR. W. C. WALKER

Dr. W. C. Walker, who had practiced medicine in Houlka for sixty-two years, died at his home August 12, following a long illness. He was 88.

Dr. Walker who was well-known in Medical and Masonic circles, was born in Houston, the son of Dr. and Mrs. W. L. Walker. He received his medical education at Vanderbilt University, and did all of his practice in Chickasaw.

He married Miss Ida Whitehead. He had been a Mason for fifty-six years and for twenty-three years was master of the lodge at Houlka. A Methodist, he had been a member of the Board of Stewards for sixty years.

He leaves six sons, Dr. John C. Walker of Jackson, Miss., W. L. Walker of Fulton, Sid Walker of Monroe, La., Oscar Walker of Houston, James B. Walker of Fulton and Joe G. Walker of New Orleans, and two daughters, Mrs. J. E. Haney of Ripley, Miss., and Miss Nell Walker of Houlka.

DR. J. E. WILLIAMS

Services for Dr. James Eugene Williams of Benoit, who died at his home August 25, were held in Benoit. Dr. Williams was seventy-six.

He had practiced medicine in Bolivar County for fifty-one years, and was the county's oldest physician. He was widely known in the mid-South.

Born at Caulk's Point, Ark., he was graduated from the Louisville, Ky., Medical School in 1896, and began his practice at Benoit. He was active in the civic, religious and fraternal affairs of Benoit and the Delta region.

He leaves two sons, James M. and Charles E. Williams of Benoit and two daughters, Mrs. V. A. Anderson of Gulfport and Mrs. Drayton B. Smith of Memphis.

DR. V. E. FOX

Dr. V. E. Fox, Webster County physician, died August 12 in Tomnolen at his home from an acute heart attack. He was taken ill suddenly in the early morning and passed away before medical aid could be administered. Dr. Fox was loved and respected by hundreds of friends and clients, and his unexpected passing is a source of genuine grief.

Dr. Fox was a graduate of Memphis Hospital Medical College.

DR. A. W. PIGFORD

Dr. A. W. Pigford of Tulsa, Okla., former resident of Meridian, died in his home on July 26. He began his practice of medicine in Meridian thirty years ago.

The doctor had been ill several years. He received his medical education at the University of Pennsylvania.

Survivors include his wife, Mrs. Mary Baxter Pigford; daughter, Miss Mary Evelyn Pigford; son, Dr. Jack Pigford, Tulsa; five sisters, Mesdames Bertha Fowler, Mobile; Archie Carter, Meridian; Louise Hale, Starkville; Dave Marshall, Houston, Texas; and Arthur Savage, Memphis, and a brother, Dr. Russell Pigford of Tulsa.

DR. W. S. SLAUGHTER

Services for Dr. Wilbur S. Slaughter who died in Jonestown, were held July 15 at his residence. Buurial was in Jonestown. He was sixty-seven.

Dr. Slaughter had practiced medicine for more than forty years at Jonestown where he was prominent in the Baptist Church and the Masonic Lodge, where he had served as master.

Dr. Slaughter was born in Cumberland, Miss.

He leaves his wife; three sons, Dr. W. L. Slaughter of Clarksdale and C. C. Slaughter of Jonestown; two daughters, Katherine and Mary Louise Slaughter of Jonestown.

WANTED

A physician competent in surgery who will come to work in a new brick, twenty-bed hospital opened September 1. A partnership considered.

DONALD L. COOPER, M.D.
Phones: Office 4351; house, 4301,
Monticello, Mississippi

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

VETERANS ADMINISTRATION HOSPITAL

Jackson, Mississippi

CLINICAL PATHOLOGIC CONFERENCE

May 15, 1947

Presentation of Case

HISTORY

B. R. S., a 67-year-old white male, was admitted to the hospital on January 4, 1947.

Patient was apparently well until July, 1946, when he is said to have had a "stroke," producing weakness of the right side. He was placed in bed for three weeks and finally recovered full use of his extremities. He had been noticing shortness of breath for several months before admission but this was not excessive, and there were no complaints of orthopnea, paroxysmal nocturnal dyspnea, or ankle edema. On December 26, 1946. patient went deer hunting, slept out in the woods, and during the night developed marked dyspnea and wheezing respirations. He was taken to a hospital at Lexington, Mississippi, where he was treated with penicillin, adrenalin, and intravenous glucose. During the two days immediately before admission, he received 4½ grains of digitalis daily. (Information obtained directly from private physician). Ten days before admission patient became confused, irritable, and was unable to recognize his relatives. He was brought by ambulance from the hospital in Lexington. (Entire history obtained from patient's relatives).

Physical Examination:

Temperature 101°, pulse 96 and regular. Patient was fairly well developed and well-nourished. He was moderately dyspneic and slightly cyanotic. He was conscious but in a stuporous state. Would obey simple commands but would not answer simple questions. He was involuntary of both urine and feces. Pupils were constricted (he is said to have had morphine just before leaving the other hospital) but they reacted to light. Ophthalmoscopic examination showed tortuosity of the vessels, but no other changes. The tongue was dry; it protruded in the midline. There was no stiffness of the neck. Examination of the chest showed numerous fine, moist, inspiratory rales extending half-way up the thorax. Wheezing, asthmatic rales were also heard throughout the chest and expiratory phase of respiration was prolonged. The heart seemed to be slightly enlarged to palpation and percussion; sounds were of moderate intensity; P_2 exceeded A_2; rhythm on admission was regular, and there was no gallop. Blood pressure was 170/90. Peripheral pulsations were equal and the dorsalis pedis and posterior tibial pulsations were normal. Abdomen was negative. There was a large scar over the anterior aspect of the right hip, the result of a wound in 1898. Rectal examination showed the prostate to be slightly tender but it was not enlarged. No definite nodules were palpated. Neurological examination showed all deep reflexes to be hypo-active but equal. Babinski sign was questionably positive on the right, normal on the left, Chaddock's sign was markedly positive on the right and questionably positive on the left. Examination of motor function was unsatisfactory but there seemed to be slight weakness of the grip on the right side. Sensory examination was unsatisfactory.

Course in Hospital:

After the initial electrocardiograph, the patient was given 0.4 mpm. of purodigin. About four hours after this the rhythm was grossly irregular and a second electrocardiograph showed auricular fibrillation. The heart rate at this time was approximately 115. Rate slowed with further digitalization. Patient was treated with oxygen, penicillin, sulfamerazine, and parenteral vitamins. Patient was fed by tube during the first few days but this was discontinued when diarrhea developed on the second and third days. Temperature gradually fell from 103°. It never became normal and continued to show daily elevations of approximately 100 to 101°. Mental confusion improved only slightly. On the day before death there were only a few rales at the lung bases. The abdomen was soft and not distended. Diarrhea had subsided considerably and the patient seemed improved. On the morning of the day of death the patient complained of sharp pain in the thighs. They were swollen but he had had recent clyses. At about noon he was found to be breathing rapidly with gurgling respirations. Sweating was pronounced. BP in the upper extremities was 170/100. Cardiac rhythm was still irregular. The legs showed mottling in the region of the thighs. The lower legs and feet were cold and very pale. Pulsations could not be felt over the femoral, popliteal, dorsalis pedis, or posterior tibial arteries on either side. BP was absent bilaterally in the legs. The mottling and diminished skin temperature gradually extended up the abdomen and a line of demarcation formed about midway between the pubis and umbilicus. The abdomen became progressively more distended and peristalsis was entirely absent. The chest showed bubbling rales bilaterally, particularly in the expiratory phase. These were thought to be predominantly tracheal. Pulse remained between 100 and 120 and the BP at its previous level until an hour or two before death when the blood pressure fell and the pulse showed an abnormally high rate. Patient gradually became comatose and died about twelve hours after the changes described in the legs were first noted.

Laboratory Examinations:

Hematology and Chemistry—on January 4, 1947, day of admission, RBC 4.54; hemoglobin 88%; WBC 10,200; polys 89%; lymphs 11%; NPN 35.7; blood sugar 161.3. On January 6, NPN 37.5; blood sugar 133.3; blood chlorides 449; blood bromide, none present. On January 9, hemoglobin 81%; WBC 19,200; sulfamerazine level 6.68.

Spinal fluid—January 5, initial pressure 160; final pressure 95. (5 cc. removed) Fluid clear and colorless. Cell count—1 lymph; Pandy—negative; protein—73 mgm%; Wassermann—negative; gold curve—00000-00000.

Blood culture—January 6, strep. hemolyticus. Stool specimens—(4) Negative for ova, cysts, and Salmonella, and Shigella.

Urinalysis—(3) Sp. Gr. 1.006 to 1.019; albumin—1-2; sugar—trace on admission, subsequently negative; acetone—negative; microscopic—rare WBC and RBC.

X-rays and Electrocardiographs:

Chest: January 4, "there is increased density over both lung fields. No consolidations. Heart is not definitely enlarged." Impression: "Passive congestion."

January 7, "Bedside film shows no evidence of any consolidation suggestive of pneumonia. The lower lung fields are somewhat clearer than on the examination of January 4."

EKG: January 4 (11:00 a.m.) Rate 104; sinus rhythm; All QRS complexes slurred and low; T1 inverted; T2 and T3 isoelectric; P4 inverted; ST4 slightly depressed; T4 inverted. January 4 (6:00 p.m.) Lead Two only—Rate 110; auricular fibrillation. January 10 (approximately 10 hours before death) Rate 120; idioventricular rhythm; P-waves absent.

DISCUSSION

As you read through the case history here you are struck with the idea that this is no simple diagnosis but that you have really a medical jigsaw puzzle. These cases are so prevalent in the Veterans Administration that the diagnosis is approached with great temerity. The further one reads the more complicated becomes the puzzle. It is as if someone had taken another jigsaw puzzle and mixed the parts.

At the beginning of the history one gets the impression we are dealing with an arteriosclerotic who has had one cerebral accident. Immediately, it flashes through your mind that this man had hemorrhage, a thrombosis or an embolus of the brain. We then pass on through history and find that he made a rather uneventful recovery and was able to go hunting. Following having slept out of doors, he is suddenly seized with a dyspnea and about a week prior to the admission to this hospital had been admitted to another hospital because of this. I mention the dyspnea and the cyanosis as the prominent symptoms and yet there are no remarks as to whether or not the patient had a chill. From the history one would assume that the man had acquired a pneumonia if this were just an ordinary case; however, following treatment with penicillin, digitalis and oxygen therapy he is then admitted to this hospital in a state of confusion and delirium in which he keeps repeating, "Oh my, oh my." This causes us to wonder if he has a digital poisoning, but the matter is cleared up by the fact that we find he has had only 5½ grains of digitalis.

In reading over his physical examination we find that the pulmonary symptoms do not bear out the idea of pneumonia. There is no dullness and only scattered rales, yet it is noted that the patient has an exaggerated P2 and that cyanosis is the prominent symptom. So we tuck into the back of our minds for future reference the idea that this man may have had some form of pulmonary embolism. It is noted that when the patient came to the hospital he had some pretibial edema, although he did not have any nocturnal dyspnea. An electrocardiogram was taken which showed at first a normal rhythm with inverted T-waves in the chest leads. These were soon followed, however, by a fribrillation. The patient suddenly developed an arrhythmia, and, keeping in mind the arteriosclerosis, we think that the patient probably had arteriosclerotic heart disease with probable mural thrombus and possibly coronary thrombosis. Certainly this fibrillation is not that of thyrotoxic origin nor of mitral stenosis. Therefore, we must have a patient who has probable arteriosclerosis, arteriosclerotic heart disease and who is comatose. The laboratory examinations rule out the ordinary causes of coma. In spite of the two plus albumin in his urine, his NPN is within normal limits. His blood sugar level is slightly high but certainly could not be the cause of a comatose condition and his spinal fluid practically rules out an acute cause for the comatose condition.

It is at this point that we become puzzled for a diagnosis. Is the cause of the coma heart failure? His pneumonia seems to be ruled out by the history. Uremia is ruled out by the NPN; subarachnoid hemorrhage by the spinal puncture. So we have either embolism or thrombosis to fall back on. Suddenly the patient develops a cessation of circulation to the lower extremities. This has to be embolic. Ileus followed this, so with a possibility of brain embolus and aortic embolus, it is logical to assume a mesenteric embolus. How, then, are emboli getting into both the greater and lesser circulatory. Are they coming from dislocated thrombi from an SBE, SBE rarely involves both sides of the heart. A potent septum might explain this, but even though there is a positive blood culture, there is no splenic enlargement, no petechiae and the history is not that of SBE. Therefore, it appears that the only explanation would be multiple emboli coming from mural thrombi from both auricles, following a fibrillation indirect by coronary arteriosclerotic heart disease.

PATHOLOGIC FINDINGS

The heart showed moderate hypertrophy and a severe grade of coronary artery sclerosis with mild myocardial fibrosis, each auricular appendage containing a mural thrombus which was adherent to the endocardium. The left was older than the right. The signs and symptoms in the lower extremities were produced by a saddle embolus at the bifurcation of the aorta. Abdominal distention and absence of peristalsis was due to infarction of the distal 4/5 of the small intestine produced by an embolus to the superior mesenteric artery. A terminal lobular pneumonia involved the right lower lobe. There was a recent infarct of the left lower lobe. The disease which started the train of events causing this patient's death was coronary arteriosclerosis.

PEDIATRICS

Penicillin as an Aid in the Treatment of Primary Staphylococcus Pneumonia with Empyema—W. S. Davis, M. E. Hyman and F. D. Runstaller, Strong Memorial Hospital, Rochester, N. Y., *Journal of Pediatrics,* 30:55-63, January, 1947

"Of eight children admitted with primary staphylococcal pneumonia between 1929 and 1944, two died. More recently, seven children with staphylococcal pneumonia and empyema have been treated by simultaneous intrapleural and intramuscular injections of penicillin. Their ages ranged from eighteen days to eleven years. Moderately large amounts of sulfonamides were given also, along with blood and plasma transfusions, vitamins, and parenteral fluids. Only one patient died, a two-month-old infant who expired thirty-six hours after admission.

For these infections it is recommended that 15,000 to 25,000 units of penicillin be given intramuscularly every three hours. A thoracentesis should be done every day, as much fluid as possible removed, and 30,000 to 50,000 units of penicillin instilled locally. Older children may receive as much as 50,000 to 75,000 units intrapleurally daily. The clinical course should be followed closely by roentgen studies and physical examinations. Surgical drainage is to be done when needed."

COMMENT

It has been known for quite some time that penicillin in large doses is the best treatment for staphylococcus pneumonia, but the idea of instilling penicillin in the pleural cavity is new, and since it has been our privilege to experience some of this work, we are gratified to add our commendation on such treatment in cases where is it indicated. Certainly it would not surplant surgical drainage when it is absolutely needed; so it should be definitely understood that it is not intended to surplant surgical drainage in cases where it is necessary.

*****

INFANT MORTALITY DECREASE—National Office of Vital Statistics, U. S. Public Health Service, Washington 25, D. C., News Release, January 10, 1947—*Quarterly Review of Pediatrics,* Vol. 2, No. 2, May, 1947.

"Final figures for 1945 show that the infant mortality rate of 38.3 deaths under one year per 1000 live births was the lowest on record for the United States. It was 3.8 per cent lower than the rate of 39.8 for 1944. Infant deaths numbered 104,684 in 1945 as compared with 111,127 deaths in 1944.

" The maternal mortality rate of 2.1 per 1000 live births for 1945 also showed a reduction of nearly 9 per cent from the rate of 2.3 for the previous year. The number of deaths from puerperal causes on which the maternal mortality rates are based were 5668 and 6369, respectively, for 1945 and 1944.

"One of the factors contributing to the lower infant and maternal mortality rates was an increase in the proportion of babies delivered in hospital. In 1945, 78.8 per cent of all registered births occurred in hospitals or other institutions; in 1944, 75.6 per cent.

"The attached table presents infant mortality rates by state of residence for 1944 and 1945. In general, low infant mortality rates indicate effective programs of medical and nursing care for mothers and infants, of communicable disease control, and environmental sanitation. Infant mortality rates are unusually lower for white populations than for nonwhite groups. The rates vary from state to state with differences in the racial composition of the population. Incomplete registration of births tends to raise the rate above its true value, whereas incomplete registration of infant deaths has the opposite effect.

Infant Mortality Rates for 1944 and 1945: United States and Each State. (Exclusive of stillbirths. By place of residence)

AREAS	Infant mortality rate per 1000 live births	
	1945	1944
United States	38.3	39.8
Alabama	44.7	45.5
Arizona	68.7	68.8
Arkansas	31.7	34.7
California	32.5	34.5
Colorado	50.3	49.4
Connecticut	29.9	30.7
Delaware	38.8	48.7
Dist. of Columbia	48.3	44.8
Florida	43.8	45.5
Georgia	42.2	44.5
Idaho	35.0	34.0
Illinois	31.6	32.4
Indiana	36.0	34.5
Iowa	30.3	33.1
Kansas	33.0	33.3
Kentucky	46.9	46.7
Louisiana	43.0	46.3
Maine	46.3	46.7
Maryland	38.0	41.5
Massachusetts	31.6	33.1
Michigan	35.8	37.9
Minnesota	31.1	31.3
Mississippi	40.6	44.1
Missouri	37.5	37.6
Montana	34.2	36.1
Nebraska	28.2	33.0
Nevada	46.3	50.2
New Hampshire	36.3	37.7
New Jersey	32.0	34.0
New Mexico	100.8	89.1
New York	31.8	32.8
North Carolina	43.3	45.4
North Dakota	29.3	35.4
Ohio	36.5	38.5
Oklahoma	40.0	41.2
Oregon	28.7	30.5
Pennsylvania	37.9	40.0
Rhode Island	28.2	35.3
South Carolina	49.9	54.9
South Dakota	31.1	34.9
Tennessee	47.7	45.5
Texas	48.8	50.4
Utah	31.1	33.9
Vermont	34.6	40.6
Virginia	47.4	47.1
Washington	34.5	33.8
West Virginia	52.0	52.0
Wisconsin	31.1	32.0
Wyoming	40.0	41.2

COMMENT

We felt that it would be quite interesting for the physicians of Mississippi to look over this report of the Vital Statistics Department of the United States Public Health Service, giving the mortality rate for infants. It is very encouraging to see the reduction in the death rate in our state as well as the nation. Notwithstanding the fact that Mississippi's population is 50 per cent Negroes, it will be noted that we are in the lower bracket for the Southern states. Oklahoma, Missouri and Arkansas have a slight advantage over us, but after all we have come a long way in the last twenty years in decreasing our mortality rate. We feel that since the hospital program has gotten under way, it will not be long now until our mortality rate will be lower and lower, provided the hospitals can get the benefit of good pediatric care of infants.

PUBLIC HEALTH

DISCREPANCIES IN THE AGGLUTINATION TEST FOR BRUCELLOSIS AS PERFORMED WITH VARIOUS ANTIGENS AND AS REPORTED FROM DIFFERENT LABORATORIES—Eisele, C. Wesley, McCullough, Norman B., and Beal, Grace A., *Journal of Laboratory and Clinical Medicine*, Vol.. 32:847-853, July, 1947.

These investigators report their findings on the extent of variability of Brucella agglutinin titres as determined with different antigens and also as reported by different laboratories. The serum from acute and chronic cases of brucellosis were checked against fifteen different brucella antigens by five different laboratories. Of the twenty-one sera tested, eighteen were called negative by one or more laboratories. Of these eighteen "negative sera," sixteen, or 89 per cent, were elsewhere called positive in titres of 1:200 or higher; twelve, or 67 per cent, were called positive in dilutions of 1:320 or 1:640—titres which are frequently considered as substantially a clinical diagnosis of brucellosis.

The significance of the agglutination test in relation to human brucellosis has long been a subject of discussion, and its interpretation in terms of clinical infection may be a difficult task indeed. The question is frequently asked, What is a clinically significant titre? An unqualified answer cannot be given and a number of limitations must be considered.

Host-parasite relationships must be considered when interpreting the brucella agglutination test. That different individuals will vary in their response to the production of brucella agglutinins is well known. Different strains of brucella vary in their agglutinogenic power. Cases of brucellosis have been verified by blood cultures in which no serum agglutinins developed. On the other hand, apparently healthy persons have been found with significantly high titres on brucella agglutination tests.

The authors do not intend to imply that the brucella agglutination test is a useless procedure. They believe that variations observed in this study are mainly due to a lack of standardizations of the antigens. Variations of technique of the test may also be a contributing factor. The authors make a plea for the standardization of all antigens by some central agency.

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HUMAN BRUCELLA MELITENSIS INFECTIONS IN MINNESOTA WITH HOGS AS THE PROBABLE SOURCE—Kabler, Paul; Bauer, Henry; and Nelson, C. Barton, *Journal of Laboratory and Clinical Medicine*. Vol. 32: 854-856, July, 1947.

ISOLATION OF BRUCELLA MELITENSIS FROM COW'S MILK—Damon, S. R.; Fagan, Raymond, *Public Health Reports*. Vol. 62: 1097, July 25, 1947.

Both of these papers report the finding of *Brucella melitensis* as the etiologic agent in human brucellosis. Previously this species of *Brucella* was considered unimportant in brucellosis in the United States except for cases occurring in the Southwestern States. The papers report human cases occurring among packing plant employees and farmers of Minnesota and Indiana. *Brucella melitensis* infection had been reported previously from Iowa. The Indiana workers isolated the organism from cow's milk, a fact of considerable epidemiologic importance.

Emil Kocher, Sc.D.
Division of Preventable Disease Control

MAINTAINING A MICROBE

A country school teacher was cashing her monthly check at the bank. Teller apologized for the filthy condition of the bills, saying: "I hope you're not afraid of microbes." "Not a bit of it," the school teacher replied. "I'm sure no microbe could live on my salary."

State Board of Health

Felix J. Underwood, M. D.

STATE HYGIENIC LABORATORY

1945-1947

By H. G. Ricks, M.D., Director

The Division of Laboratories experienced an increase of 39,408 specimens during the biennium ending June 30, 1947, as compared with the previous biennium. This increase was brought about by a general return of physicians to private practice and new developments in diagnosis and control of certain diseases.

The Laboratory was able to maintain a high standard of efficiency both in quantity and quality of performance. This was made possible by a group of well-trained, loyal employees who made use of intelligent but untrained assistants, who could use their hands and would follow instructions.

Examinations for the Laboratory Diagnosis of Venereal Diseases:

Serodiagnosis of syphilis accounted for the greater number of specimens examined. The total number of specimens examined in this category showed a decline of 40,083 during this period as compared with the previous period, although the number of blood specimens submitted for quantitative analysis increased from 22,238 during the previous biennium to 87,243 during the period being reported here. This indicates a tremendous increase in work volume, as it requires approximately ten times as long to perform a quantitative test as to perform a qualitative procedure.

The number of spinal fluid specimens received and examined for serodiagnosis of neurosyphilis increased from 24,833 to 29,089 during the present period. The total number of specimens examined by microscopic technique for the diagnosis of gonorrhea increased from 25,606 to 28,947. The number of specimens examined by darkfield technique for the diagnosis of primary or secondary syphilis decreased from 166 during the previous period to sixty-three during the present period.

The increase in the number of quantitative and spinal fluid examinations is probably due to the effort expended by the Preventable Disease Division and the county health departments in making follow-up examinations of individuals who had received the recommended quantity of treatment. The increases were due also in some measure to the increased interest on the part of the medical profession in attempting to render a better diagnostic and treatment service to their patients.

The increase in specimens for microscopic diagnosis of gonorrhea was due in no small degree to the policy of some health officers to take specimens on foodhandlers and antepartum cases.

During the entire period the laboratory has continued its coöperation with the armed services by rendering laboratory service for annual physical examinations, follow-up blood examinations of treated individuals and new enlistments.

The laboratory has exceeded the standard set by the United States Public Health Service for a coöperative laboratory for each of the years of the biennium. In the coöperative study of unknown sera with the Venereal Disease Research Laboratory of the Public Health Service, the State Laboratory performed with credit.

Milk and Water:

Examinations of milk and water have continued to occupy a prominent place in the laboratory program. The total number of specimens of water examined declined by 1,072 specimens as compared with the previous biennium. The number of specimens submitted for chemical analysis increased by eighty-two as compared with the previous period.

The total number of specimens of milk submitted for bacteriological examination and butter fat determination increased from 6,528 to 6,978 during the present period. Cryoscopic examinations to determine the amount of added water have been done routinely on specimens of milk showing low solids not fat. Specimens of milk have been examined for veterinarians to assist them in making diagnosis of mastitis. Specimens have been examined also for private individuals to assist them in selecting animals to purchase for the family milk supply.

The laboratory has continued to coöperate with the Division of Sanitary Engineering in performing chemical analysis of water, especially of new water supplies. The laboratory has furnished consultative service to the Sanitary Engineering Division in solving stream pollution and sewage disposal problems.

Blood Cultures and Agglutination Tests:

During the biennium 15,409 specimens were examined serologically for the diagnosis of typhoid fever, paratyphoid, typhus, tularemia and brucellosis. Of this number 497 showed a positive agglutination for typhus, 224 for tularemia, 269 for brucellosis, and twenty for infectious mononucleosis.

There were 15,182 specimens of blood clots cultured. Of this number sixty-seven were positive for typhoid bacillus.

There were 5,517 miscellaneous specimens examined.

There were 32,184 blood specimens examined for the presence of malaria parasites. Of this number 304 specimens showed the presence of the organisms. Of the positive specimens ninety-eight occurred in 1945 and 206 in 1946.

Enteric Bacteriology:

There were 14,861 specimens of feces examined bacteriologically. Of this number thirty-six specimens showed the presence of the Flexner group of dysentery organisms, 286 showed the presence of typhoid bacilli, and 113 showed the presence of paratyphoid B.

There were 12,558 specimens of urine examined bacteriologically. Of this number eighty-six showed the presence of typhoid bacilli and twenty-seven showed the presence of paratyphoid B.

Bacteriology of Specimens from the Oral and Respiratory Tract:

There were 24,618 specimens examined for the presence of diphtheria organisms. Of this number 4,217 showed the presence of diphtheria organisms.

There were 10,390 specimens of sputum examined for the presence of the tubercle bacillus. Of this number 1,536 showed the presence of acid-fast organisms by microscopic examination. There were 445 specimens submitted for culture for isolation of the tubercle bacillus. Of this number forty-four were positive. There were thirty-three specimens positive by animal inoculation.

Animal Brains Examined for Negri Bodies, Rabies Treatments, and Typhiod Vaccine Distributed:

The brains of 923 animals were examined for the presence of Negri bodies. Of this number 492 showed the presence of the bodies by microscopic examination. Every county in the state except Benton, Bolivar, Carroll, Choctaw, Coahoma, Greene, Itawamba, Lowndes, Oktibbeha, Quitman, Tunica, Webster and Winston was represented in the list of counties submitting animal brains for examination.

There were 5,720 rabies treatments distributed to individuals within the state. Treatments were sent to every county with the exception of Benton and Issaquena.

There were 658,200 cc. of typhoid vaccine distributed to the county health departments and physicians of the state.

Examinations for the Laboratory Diagnosis of Intestinal Parasites:

There were 39,538 feces specimens submitted and examined for the presence of intestinal parasites. Of this number 4,571 showed the presence of hookworm ova, 334 Enterobius, 81 Trichuris, 62 Ascaris, 62 Hymenolepis Nana, 151 Endamoeba Histolytica, and 1,993 Gardia Lamblia.

Two workers in the parasitology division completed a six weeks' course sponsored by the United States Public Health Service for the laboratory diagnosis of parasitic diseases. One county technician also completed the course sponsored by the United States Public Health service for the laboratory diagnosis of parasitic diseases. One county technician also completed the course.

Clinical Laboratory Advisory Services:

This service has continued without interruption during the biennium.

The facilities of the laboratories of the Mercy Hospital, Vicksburg, have been used throughout the period for training hospital and clinic technicians who have been awarded scholarships for refresher courses in clinical laboratory procedures.

Both the advisory service for in-service instruction and the refresher courses have been requested in a very satisfactory number of instances.

The two technicians assigned to this work have been received by hospital and clinic management as real aids to their local laboratory service.

RECENT ADDITIONS TO THE LIBRARY

1. Adams, H. S.—*Milk and Food Sanitation Practice.* Commonwealth Fund, 1947.
2. Am. Public Health Ass'n.—*Com. on Hyg. and Housing—A yardstick for health officers, housing officials and planners:* 3 vols. Am. Public Health Ass'n, 1946.
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4. Ashburn, P. M._*The Ranks of Death, a med. history of the conquest of America.* Coward-McCann, Inc., 1947.
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13. Corner, G. W._*Ourselves Unborn. An Embryologist's Essay on Man.* Yale University Press, 1944.
14. Dunbar, F.—*Emotions and Bodily Changes.* 3rd ed. Columbia University Press, 1947.
15. Eastman, N. J.—*Expectant Motherhood.* 2nd ed. rev. Little, Brown and Company, 1947.
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25. Lewis, Claudia—*Children of the Cumberland.* Columbia University Press, 1946.
26. Lewis, G. M. and Hopper, M. E.—*An Introduction to Medical Mycology.* 3rd td. Year Book Pub., 1947.
27. Little, R. B. and Plastridge, W. N., ed.,—*Bovine Mastitis.* 1st ed. McGraw-Hill, 1946.
28. Marsh, E. L.—*Nursing Care in Chronic Diseases.* Lippincott, 1946.
29. Med. Clinics of North America_*Diabetes,* March, 1947. Saunders, 1947.
30. Med. Clinics of North America—*Symposium on Blood Trans. and Rh Factor.* July, 1947. Saunders, 1947.
31. Med. Clinics of North America—*Symposium on Pediatrics.* May, 1947 Saunders, 1947.
32. Meredith, F. L.—*Hygiene . . . Physical and Mental Health.* 4th ed. Blakiston, 1946.
33. Mohler, J. R.—*Relation of Diseases in Lower Animals to Human Welfare.*
34. Natl. Tuberculosis Ass n—*Trans. 42nd Annual Meeting, 1946.* Natl. Tuberculosis Ass n., 1947.
35. N. Y. Acad. of Medicine_*Medical Addenda, Related Essays on Medicine and the Changing Order.* Commonwealth Fund, 1947.
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37. Olson, L. M.—*Improvised Equipment in the Home Care of the Sick.* 4th ed. Saunders, 1947.
38. Potter, E. L.—*Rh: its relation to congenital hemolytic disease and in intragroup transfusion reactions.* Year Book Pub., 1947.
39. Rhoades—*The Self You Have to Live With.* Lippincott, 1947.
40. Rosenthal-Stern-Rosenthal—*Diabetic Care in Pictures.* Lippincott, 1946.
41. Spalding, E. K._*Professional Adjustments in Nursing.* 3rd ed. Lippincott, 1946.
42. Spies, T. D.—*Rehabilitation Through Better Nutrition.* Saunders,, 1947.
43. Steiglitz, E. D.—*The Second Forty Years.* Lippincott, 1946.
44. Stimson, P. M.—*A Manual of Common Contagious Diseases.* 4th ed. Lea and Ferbiger, 1947.
45. Strecker, E. A.—*Their Mother's Sons.* Lippincott, 1946.
46. Turner, D. F.—*Handbook of Diet Therapy.* University of Chicago Press, 1947.
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49. Williams—*Family Health.* Lippincott, 1945.
50. Year Book Pub.—*Yearbook of Dentistry, 1946.* Year Book Pub., 1947.

(*NOTE*—Physicians may borrow most books in the Library for two-week periods. The Librarian will also be glad to assist in the selection of periodical references on any subject desired. Periodicals may be borrowed for a period of three days to a week, depending upon the date of the periodical. The Library now has a very good collection of the important periodicals in medical and related sciences).

Woman's Auxiliary

FROM OUR PRESIDENT

As we look forward to celebrating the Silver Anniversary of the organization of the Woman's Auxiliary to the Mississippi State Medical Association, it is a good time to pause and take inventory of our accomplishments.

The objectives set forth in our constitution are broad in scope. It is well for us to study and evaluate our achievements and failures in the light of these objectives. Much has been accomplished throughout these years, but there are new fields of endeavors worthy of our consideration. One of the most important is the increasingly apparent need for some method whereby the public may protect itself against the economic catastrophe of serious illness. The medical profession through its official body, the American Medical Association, is attempting to meet that need through its National Health Program and its Prepayment

Medical Care Plans. The Auxiliary has been asked to assist in putting these plans into effect through a program of public relations and education.

We have also been asked to assist in the nurse recruitment program which is so vital at this time due to the acute shortage of nurses.

It has been rumored that when the Congress reconvenes the Wagner-Murray-Dingell bill will be near the top of the list with only a few minor changes. We should be so well informed on this subject that we will never let the opportunity pass of proving to the public that socialized medicine is not what it wants or what it needs. We must never lose sight of the fact that it is up to us to place before the public *Hygeia,* the health magazine.

There are more than 1300 doctors in Mississippi and only 501 members of the Auxiliary. We do not know how many doctors' wives there are, but I would like to set a goal of 1002 members by March 31, 1948. That means that it is up to every member of the Auxiliary to gain one new member. It is not at all impossible. When you read this message, won't you determine in your heart that you will do just that? In unity there is strength. How much more we could accomplish toward carrying out the high ideals of those who have gone before us, and of our husbands' noble profession if our membership were doubled! Next to our church and our homes should come our husbands' profession.

As we go forth in this new year may we visualize the opportunities for service that stretch out before us, and in assuming our offices in state, district, and county, may we study carefully our duties as they are set forth in our constitution and by-laws. The success of the work of each individual officer and committee chairman depends largely on the correlation of activities with each other and a general understanding of the duties of each office. The *Bulletin* and the *Handbook* are valuable and essential to progressive Auxiliary work.

The torches that were lighted so brightly by our pioneers have been lifted higher and higher and been made to shine brighter and brighter each year until I feel that we will have to stand on "tip-toe" as it were to make them shine just a little brighter this year. Are we willing to do it?

FANNIE C. McILWAIN, President

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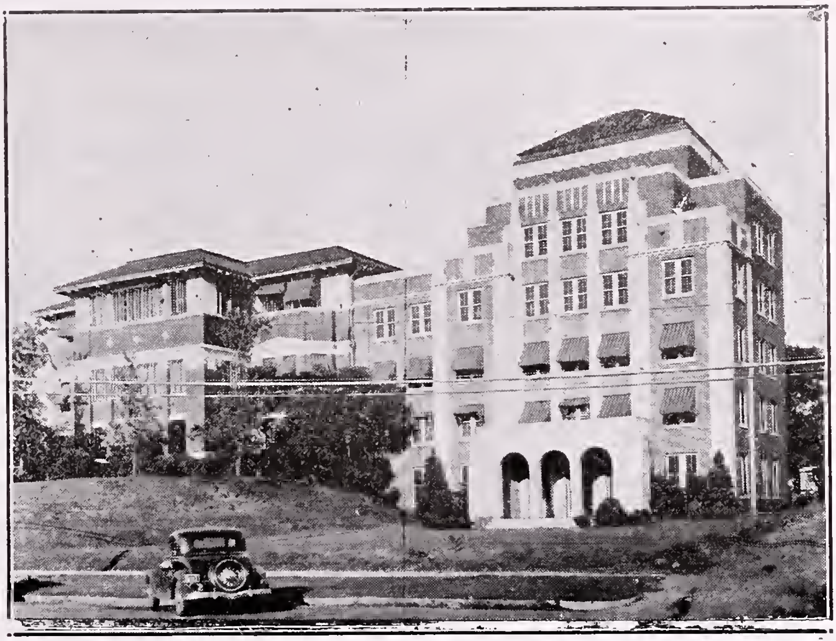

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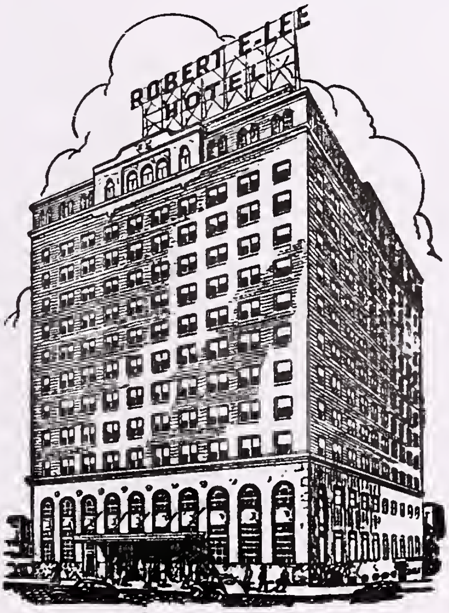

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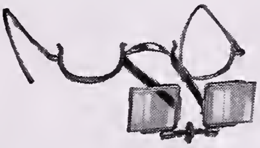

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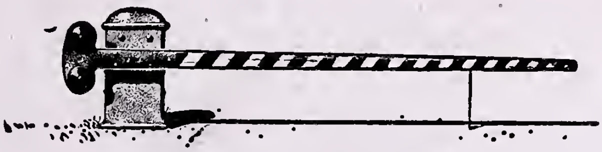

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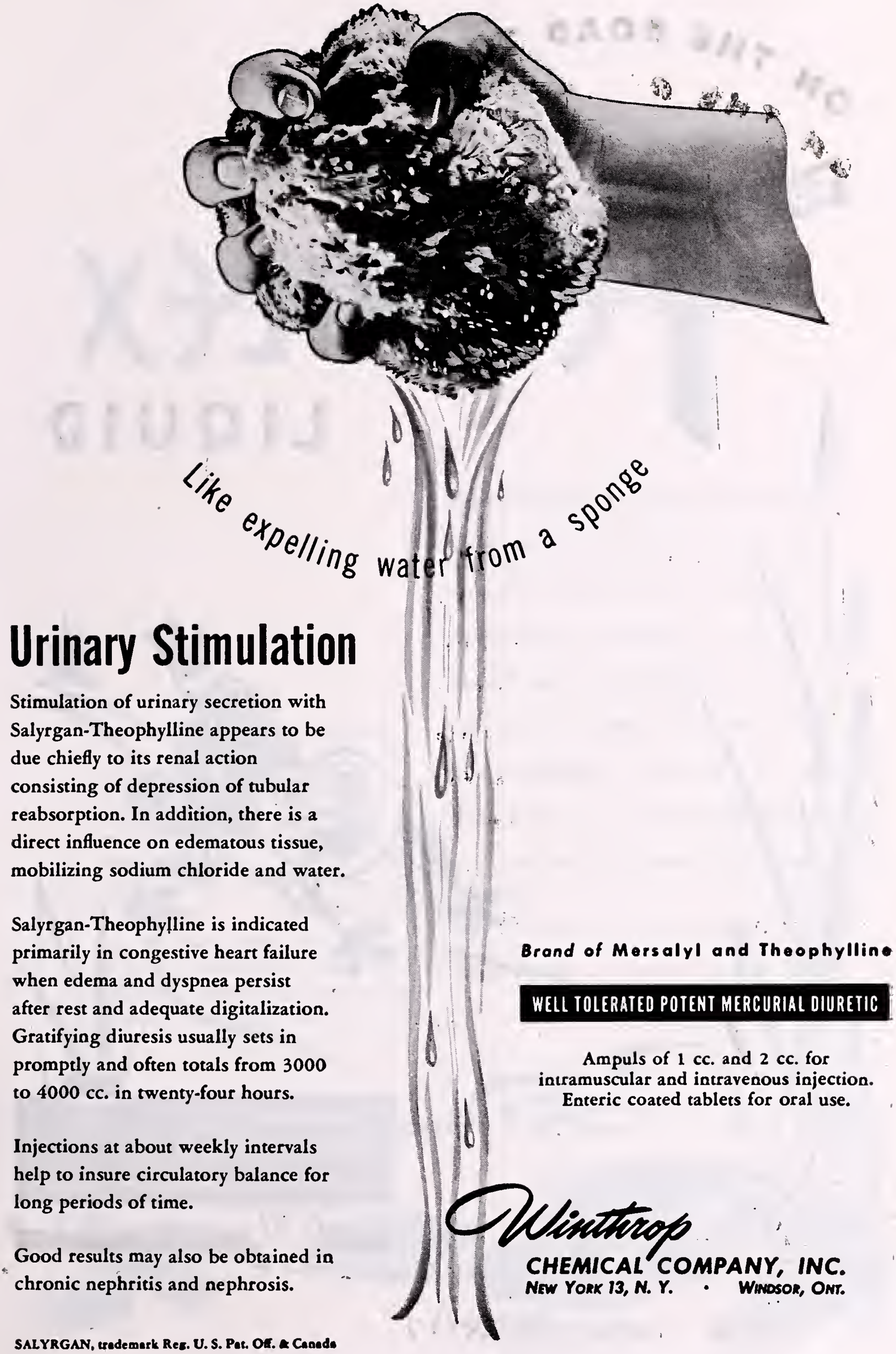
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[1] Editorial: J.A.M.A. 134:292 (May 17) 1947.

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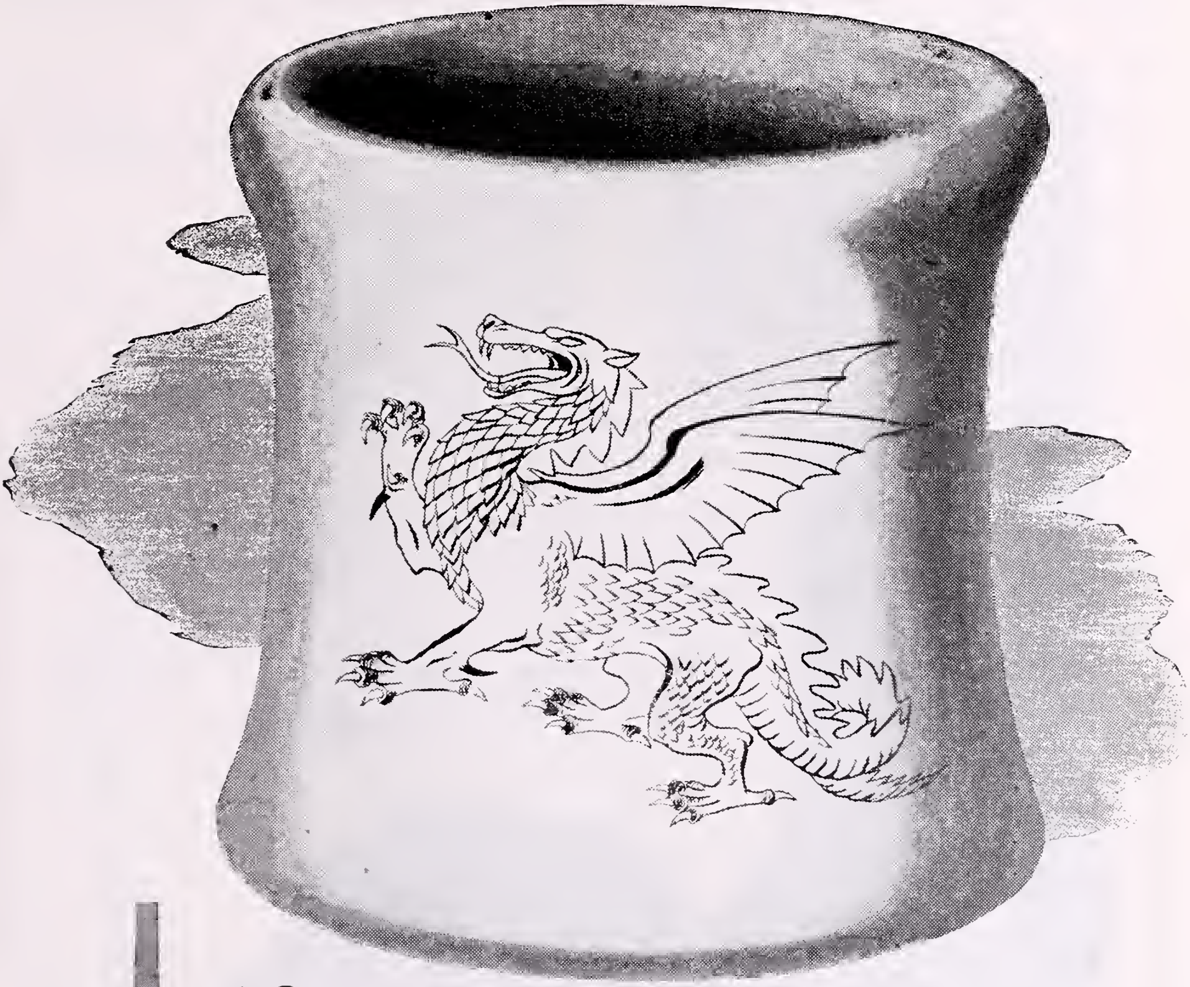

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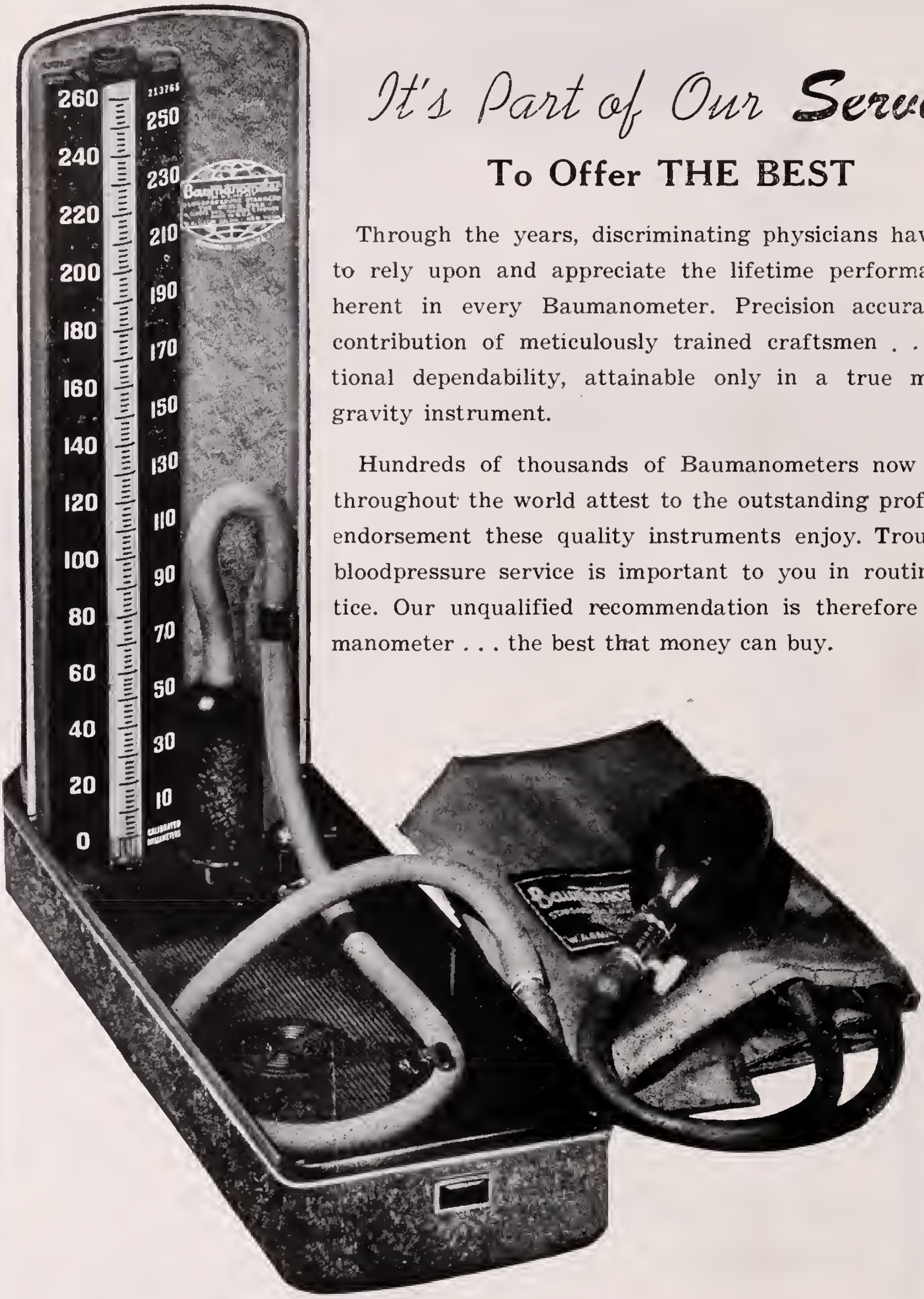
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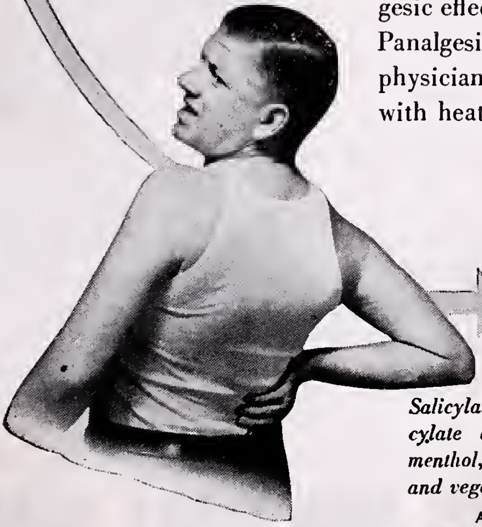

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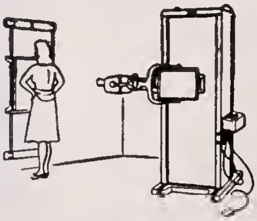

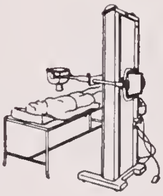

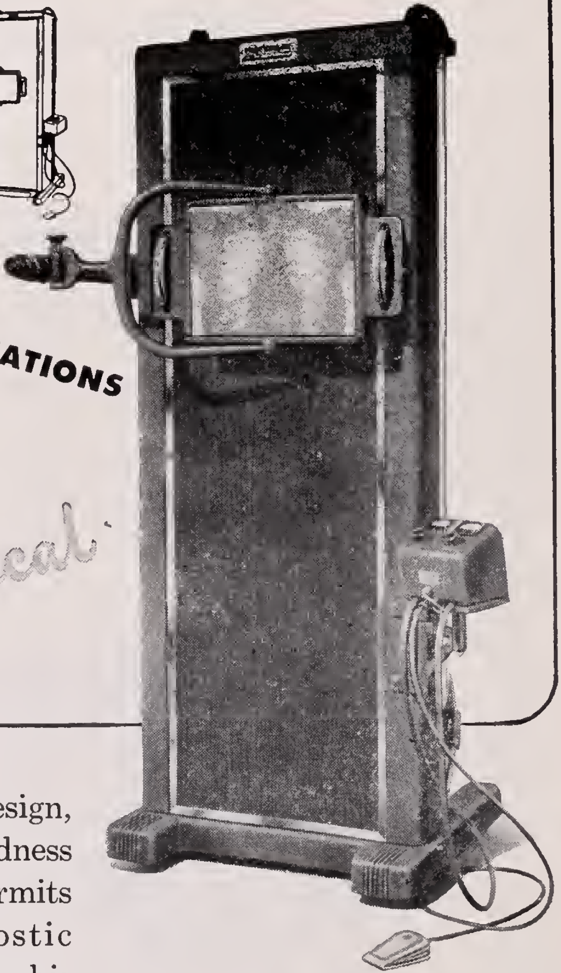

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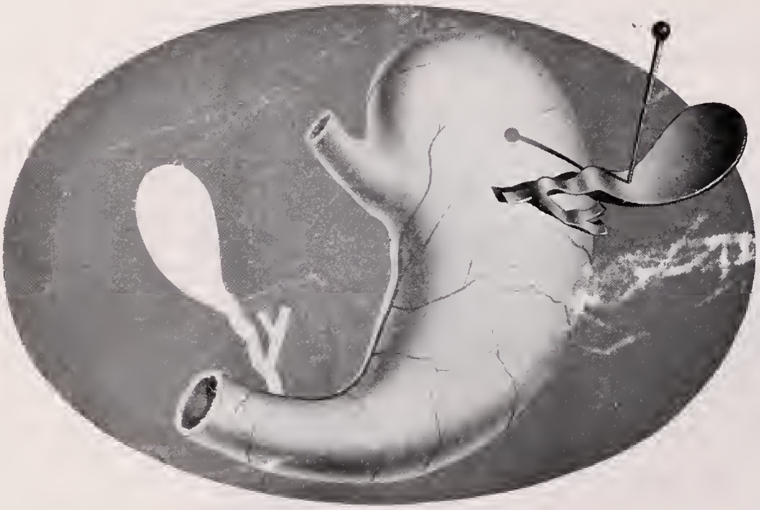

This illustration has purposely been made to show the common duct opening into the stomach. Had nature intended the bile to be excreted in the stomach, she would have placed the opening there herself. Instead, nature releases bile in the small intestine, in which it carries out its function most efficiently.

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The Surgical Treatment of Hypertension*

HARWELL WILSON, M.D., F.A.C.S.
Memphis, Tennessee

ESSENTIAL hypertension, or the state of elevated arterial pressure for which no specific cause can be found, is a highly complex problem. The gravity of the problem is emphasized by the fact that hypertension with its complications is now the leading cause of death in this country. The medical management of hypertension has been and is limited to rest, sedation, adjustment of the patient's mode of life, dietary restrictions in certain instances, and the use of vasodilator and toxic depressant drugs. These measures have given some palliative relief to many patients, but have probably never resulted in a true cure or permanent arrest of the disease. It must also be remembered that the course of the disease is at times difficult to predict, since in some patients the disease progresses much more slowly than in others. Essential hypertension usually progresses until irreparable damage has been done to the brain, heart, or kidney. In many patients with a fairly rapidly progressive essential hypertension, one may with a fair degree of accuracy predict the occurrence of such vascular complications unless the hypertensive state is altered. The diagnosis of essential hypertension is one of exclusion, since there are many pathologic conditions which result in a temporary, recurrent or continuous elevation of the blood pressure. Adrenal tumor, cerebral trauma, pituitary adenoma and certain types of unilateral kidney disease are but a few of the specific causes which may result in the hypertensive state.

Rationale of Surgical Treatment:

Perhaps the simplest explanation of the rationale of surgical treatment of hypertension by extensive sympathectomy is the concept that the blood pressure is lowered by decreasing the peripheral arterial resistance. Since a certain amount of tone or constriction of the blood vessels is constantly maintained by the sympathetic nervous system, the removal of this tonal or constricting effect by resecting appropriate sympathetic nerves allows the affected vessels in the sympathectomized area to dilate, thereby causing a fall in the blood pressure. The direct relationship between vasodilation and changes in blood pressure are well known; however, the true explanation of the benefits to be derived from the surgical treatment of hypertensive patients may be more complex. Such explanations require a consideration of the etiology of the disease. Goldblatt[1] demonstrated with his ingenious clamp that renal ischemia produces hypertension without evidence of impaired renal function. Numerous investigators believe that ischemia of the kidney results in the production of a pseudoglobulin called "renin," which is quite instrumental in causing the elevated blood pressure. There may be many primary causes of renal ischemia. Peet[2] believes that in most cases the cause of renal ischemia is related to nervous stimulation to the vessels of the kidneys by way of the splanchnic nerves from brain impulses transmitted over the sympathetic chain. Experimentally, it has been shown that stimulation of the splanchnic nerves of an animal results in an elevation of the blood pressure. Peet reasons that the elevation of blood pressure in such cases is due to renal ischemia produced by the stimulation. He believes, therefore, that resection of the splanchnic nerves and of the sympathetic trunks which contribute to their make-up attacks the basis of the hypertension by tending to remove one of the principal causes of renal ischemia. The scientific accuracy of the above hypothesis at present is not established. However, no one can question the fact that in any closed system, other things being equal, a decrease in peripheral resistance will favor a decrease in pressure.

Surgical Procedures:

A variety of surgical procedures in the past have been used in the treatment of hypertension. The subdiaphragmatic splanchnic resection of Adson[3] and Craig[4] is perhaps the least radical of the procedures advanced and is not highly regarded at the present time. The bilateral supradiaphragmatic splanchnicectomy of Peet[2] is a more radical procedure, but in general the results have left much to be desired.

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*From the Department of Surgery, University of Tennessee and the Lyle Motley Clinic.

In 1940, Smithwick[5] developed the technique for thoracolumbar sympathectomy whereby the splanchnic nerves, together with the sympathetic chain from the level of the ninth thoracic ganglia through at least the first lumbar, were removed bilaterally in a two-stage operation. This procedure removed the sympathetic control from a relatively large area of the body, included in which are the kidneys, abdominal viscera and the upper portions of the lower extremities. It is the concensus of many investigators in the field that the thoracolumbar sympathectomy of Smithwick offers patients a much greater chance of improvement than to the less radical procedures. In fact, some workers—notably Linton, Grimson[6] and Popin—have advocated even more extensive sympathectomies than that of Smithwick. The thoracolumbar sympathectomy of Smithwick which we have been carrying out is commonly performed in two stages, the interval between operations usually varying from two to three weeks. The approach to the splanchnic nerves and to the thoracolumbar sympathetics is retropleural and retroperitoneal. An intratracheal anesthetic is always used, and this removes the difficulty which might otherwise be encountered should the pleura be opened.

The operation itself does not carry great risk, and most hypertensive patients tolerate the procedure remarkably well. It is to be borne in mind, of course, that any of these patients may suddenly suffer a fatal complication involving the brain, heart or kidney whether surgery is undertaken or not; and we have had this happen when patients have been awaiting what they considered an opportune time to undergo the operation. While the surgical risk of properly selected patients does not seem great, there are certain troublesome complications which may require attention. One of them is intercostal neuralgia, which is a source of much discomfort to certain patients for several weeks after operation. Postural hypotension also may be troublesome in some patients. When this occurs, it can be controlled by having the patient wear elastic leg bandages and a light abdominal support.

Method of Study and Selection of Cases

All patients subjected to surgery are first given a careful medical examination to determine whether a demonstrable primary cause for the hypertension exists and whether surgical intervention offers a reasonable chance of helping the patient. The blood pressure is taken repeatedly under standard conditions as a correction for the fluctuations always found in initial examinations. A study of the eyegrounds and vessels affords valuable information relative to the state of the disease. The heart is carefully examined, including electro-cardiographic and x-ray studies. Kidney function is judged by urine analysis and non-protein nitrogen determination, and the kidneys are further investigated by either an intravenous or a retrograde pyelogram. Where the non-protein nitrogen is not elevated, the intravenous pyelogram is usually sufficient.

After the above studies have been made, a sedation test is given using nembutal or sodium amytal in repeated doses at night until the patient is sleeping soundly, and the blood pressure is taken every hour. A significant fall in systolic and especially in diastolic pressure under sedation is an indication that good results can be expected from surgery. In general, patients with a low or narrow pulse pressure are considered more favorable candidates for surgery than are those with a very wide discrepancy between the systolic and the diastolic pressure. Younger persons, as might be expected, are better candidates for operation than are older ones. Investigators believe that fifty-five is about the upper age limit for patients that should be subjected to operation. In certain patients, operation is definitely contraindicated. It is contraindicated in patients with hypertension and congestive failure when the failure cannot be brought into the compensated state of medical management. Patients with a persistently high retention of nitrogen are likely to receive little or no benefit from operation. Patients with persistent encephalopathy are unfavorable candidates.

In contrast to the above mentioned cases, one is justified in operating upon a patient who has recovered from one cerebral accident as an effort to prevent a recurrence. The same holds true regarding the patient who has had one attack of coronary occlusion or congestive heart failure followed by recovery.

Results of Surgical Treatment of Hypertension

We believe that the results obtained from this treatment depend primarily upon, first, the proper selection of patients for operation, and, next, the type of surgical procedure performed. With reference to the selection of patients, we feel that while one can often say about these cases that the patient has "all to gain and nothing to lose" by the procedure, still, on the basis of experience we should exclude certain cases as being inoperable, since we know that only cases meeting the criteria mentioned are apt to benefit from surgical treatment. In the second place, we feel that the more radical operation, such as the Smithwick thoracolumbar sympathectomy, offers the patient the best chance for improvement.

In our own cases, we have experienced no serious difficulties; however, the series is still too small and the time interval too brief to give a worthwhile report on results. The experience reported by Smithwick, de Takats[7] and Peet, however, would enable one to draw certain definite conclusions. Among these would be that some patients with hypertension have been given a normal blood pressure for a period of years, others whose pressure has not returned to normal have had the pressure definitely lowered and have been greatly improved symptomatically, and still other patients who have had little improvement in the blood pressure from operations have been improved symptomatically. It must also be stated that in a few instances no improvement resulted and in some instances when the blood pressure was lowered the patient still did not live more than a year following the procedure. In general, the mortality from the operation itself has been quite low.

SUMMARY AND CONCLUSIONS

1. Essential hypertension is a complex disease of great importance, since the outstanding cause of death in this country is cardiovascular disease and hypertension.

2. The surgical approach by sympathectomy to the treatment of hypertension seeks to lower the blood pressure by producing a decrease in peripheral arterial resistance and possibly by altering the vascular supply to the kidneys.

3. It is felt that a careful study of patients suitable for operative treatment is necessary if results are to be satisfactory.

4. The thoracolumbar sympathectomy as originally advocated by Smithwick is thought at the present time to be the best procedure for the surgical treatment of hypertension.

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There was a time when more than half the babies in the state were delivered by midwives, nearly all the colored and ten to fifteen per cent of the whites. Now in some sections more than half the babies are being delivered in the hospitals by doctors. This we may call the march of obstetrics.

Vagotomy in Duodenal Ulcer*

George Sellers Graham, Jr., M.D.
Seale Harris Clinic
Birmingham, Alabama

A RECENT advance in the management of peptic ulcer has been made by the operation devised four years ago by Dragstedt[1]. It consists of sectioning the anterior and posterior vagus nerves above the cardia as they pass down on the lower esophagus and the operation is called either "vagotomy," or "gastric nerve resection." This procedure has a dramatic and instant effect on peptic ulcer of almost all types and, as will be shown later, follow-up periods of over four years have yet to show recurrences in most large series of patients. The operation may be done through a transthoracic approach or through an abdominal approach. The latter is not difficult technically and can be done by any general surgeon and deserves the serious consideration of all physicians who may have the occasion to treat patients with peptic ulcer suffering from any of the complications that will be pointed out subsequently. Before a discussion in detail of vagotomy and its results, one should have a thorough understanding of what is known at present about the etiologic factors in peptic ulcer because they are pertinent in the final decision as to whether or not the patient should be submitted to this procedure.

General Considerations

One of the most fundamental etiologic principles in ulcerative disease is a variation from the average in personality type and reaction to environment. The ulcer patient is an individual who usually over-reacts to life situations and who possesses what appears to be an aggressive and driving personality. The patient must always consider the ulcer patient as a personality type and must evaluate and if necessary, attempt to modify the personality and the environment of the patient as well as his habits and his reaction to disease. The keystone of adequate management of the patient with peptic ulcer is individualization and the physician who acts upon this principle understands that the patient's personality and his particular responses to his surroundings play a part in the pathogenesis of the disease.

There are certain definite requirements that we know must be present in order for ulcer to develop. In nearly every case there is the distinct personality type and reaction type mentioned above, but this is not so universally present as the second factor which is gastric acid.

There is an old and very good clinical axiom that "no acid equals no ulcer." We are bold to say that there are no peptic ulcers without acid being present; and, while the occasional case of the apparent exception to this rule may be encountered, more careful study of such instances will show that there is acid present although it may not appear until stimulation with histamine and after repeated testing. It should be pointed out that there are no peptic ulcers in places in the gastrointestinal tract where no acid is present. That a patient whose stomach is unable to secrete acid upon stimulation with histamine does not have a peptic ulcer has been particularly brought to attention by Palmer and Nutter[2] who reviewed 2,200 proved cases of active gastric and duodenal peptic ulcers without finding a single patient showing complete and persistent histamine refractory achylia. Brockus[3] has had the same experience. In over 300 cases of peptic ulcer seen in the past three years we have not encountered a single one in which acid was absent from histamine stimulation.

However, from this one should not make the mistake of believing that the titratable free hydrochloric acid on gastric analysis is necessarily important in the individual ulcer case. The important thing is whether or not free hydrochloric acid is present. In our opinion the titratable **amounts** are not significant. Further, one must not be led to believe that it is necessarily true that ulcer is actually caused by hyperacidity or by the presence of hydrochloric acid and pepsin or that the acid level must necessarily be diminished in order to bring a cure or prevent recurrences. The natural history of the disease lets us know that while acid neutralization is helpful, it is not present, and while we know that acid must be present, we do not know its final role in the ulceration.

In addition to the etiologic factors suggested by the ulcer personality and the universal presence of acid, a third element in ulcerative disease is the inability of the mucous membrane to withstand erosion.

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*Delivered before the Cullman County Medical Society, Birmingham, Alabama, May, 1947.

Virchow in 1853 thought that there must be a local mucous membrane difficulty which he stated was one of vascular supply. In recent years there has been little pathologic opinion to support this and it has rather gone out of fashion as an etiologic theory. Yet, no less a gastro-enterologist than the famous German, von Bergmann,[4] was one of the early advocates in this century of the role of vascular spasm in leading to local membrane susceptibility. He postulated that the localized area of vascular spasm with subsequent erosion of the membrane was due to an imbalance between the vagus and the sympathetic nerve supply. There are certain important considerations against this theory. If von Bergmann was thinking in terms of an infarctive process one calls to mind that ninety-five per cent of the blood supply of the stomach can be interrupted surgically without subsequent trouble. However, we are of the opinion that von Bergmann did not have in mind so much an essentially infarctive process as he did an area of mucous membrane which from time to time became undernourished to the extent that it was either susceptible to digestion or undernourished to the extent that it was unable to elaborate anti-digestive agents. Kenjetzny and other continental physicians were strongly impressed by the local membrane factor in ulcer and they presupposed that there was first an area of duodenitis or gastritis as a result of which the mucous membrane became more liable to the penetrating process once it had been begun by such things as trauma from particles of food. In our judgment, this theory holds little weight at the present time since the gastroscopists in their observations in cases of severe erosive gastritis have shown that there is not a subsequent development of peptic ulcer.

We are indebted to the German clinicians and pathologists of the latter part of the nineteenth century for the demonstration that ulcers are penetrating processes. Aschoff and others later showed the progression from acute shallow erosions into true perforated ulcers[5]. This concept of ulcer being a penetrating process is one that we all accept at the present time without stopping to consider its fundamental meaning and relation to such interesting theories as that of von Bergmann where the predisposing lesion is held to be an area of undernourished mucous membrane which may allow an erosive and penetrating lesion to develop.

Of course, it is an old and often repeated idea that another factor in local membrane susceptibility is deficiency in secretion of mucus. There is no doubt but that the protective effect of mucus is well established. It is doubtful however, that much advancement has been made or will be made along this particular line.

There are certain conditional and systemic factors which are important in the development of chronic peptic ulcer. These factors are probably always present in addition to the previously mentioned personality type, acid, local membrane difficulty.

For one thing, chronic peptic ulcer is a disease peculiar to only one animal—man. There is much evidence that it is even more specifically a disease of civilized man; and further, it tends to run in family groups.

A relationship to the central nervous system was recorded by Rokitansky[6] in 1841, who said, "Perhaps the proximate cause may be looked for in diseased innervation of the stomach, owing to a morbid condition of the vagus and to extreme acidification of the gastric juice," and he directed attention to the relationship between acute ulcers of the stomach and intracranial disease. Cushing later revived interest in this aspect of ulcerative disease and the admirable work of Keller soon followed. And in this connection, we have already stated that von Bergmann had commented on the probability that an abnormality in the **function** (rather than disease, as postulated by Rokitansky) of the vegetative nerve system was responsible for the pathogenesis of peptic ulcer and suggested that psychologic factors might be concerned through their effect on this portion of the nervous system. What the psychologic factors may be has perhaps been best put by Brosnin,[7] who states that ulcer is the (fortuitous) end result of unconscious chronic emotional stimulation. He states that the personality is usually one with a strong passive trend, who cannot admit and must overcome it with strong aggressive characteristics and emotions and actions. If this be true and since we are inclined to von Bergmann's reasoning that the psychologic factors act through disturbing the autonomic nervous system **function** which in turn disturbs the integrity of the mucous membrane by the local vascular system so that it can be digested provided acid is present, a theory is thus constructed which will prove most useful in explaining the curative effect of cutting the vagus nerve in patients with peptic ulcer. The measurable effect of sectioning this nerve is that it leaves the stomach very atonic with a marked decrease in gastric peristalsis and the gastric secretion is markedly reduced.

Recent work by Wolfe has also shown that the membrane color, and therefore, vascular status does not respond to emotional stimuli after vagus section, whereas it flushes and blanches swiftly in response to emotional factors before vagus section.

If the vagus nerve to the stomach is cut, there is an obvious unrestrained activity of the sympathetic supply. In animals, stimulation of the sympathetic nerve supply results in the stomach elaborating a secretion rich in mucus and therefore with antipeptic effect. Further, it is not definitely settled but is felt that sympathetic stimulation may suppress gastric secretion in volume as well as peptic effect.

Most clinicians agree that the clinical and physiologic characteristics of vagotonia are usually seen in ulcer patients—i.e.—low blood pressure, slow pulse, contraction of the pupils, increased secretion of lacrimal glands, gastric hyper-secretion, hyperperistalsis and hypertonicity, spastic colon, hyperinsulinism and lack of sensitivity to atropine.

Having thus sketched rather briefly certain of the fundamental points in the etiology and pathogenesis of ulcerative disease, a working hypothesis can be constructed that would seem to satisfy most of the necessary requirements for an explanation of peptic ulcer and afford a basis for explaining why cutting the vagus nerves should aid in healing ulcer. However. theory must be correlated with the symptoms and natural history of peptic ulcer, and for that reason certain remarks on the pain of this disorder are pertinent.

Just as acid gastric juice is so important for the development of ulcer, so too it is apparently primarily related to the pain. The statement that "no acid equals no ulcer" can be extended to include "no acid equals no ulcer equals no ulcer pain," and the reverse is true that "ulcer plus acid equals pain." This is very simple but a fundamental clinical observation. Palmer[8] urges anyone who disbelieves this to take an ulcer patient in pain and with a gastric tube empty the stomach. The pain will disappear. Inject 200 cc. of 0.5 HCl. through the gastric tube and pain returns. Remove the acid and pain goes. Inject alkali solution through the tube and there is no pain. Remove the alkali and put acid into the stomach and pain returns.

When ulcer pain is present, acid gastric content is always present. Sippy showed this and it cannot be emphasized too often. The phrase is often heard in common medical usage, "When his stomach is empty he gets pain and so he has an ulcer." This is incorrect. The patient has pain not because the stomach is empty, but because there is acid gastric content present.

It is important to note that by varying the **concentration** of acid introduced into the stomach of the patient with an active ulcer, one can vary the **time of appearance** of the pain after the acid has been administered.

It has been suggested that the pain of ulcer is due to spasm and certainly there are many patients in whom the element of spasm seems to be very important, and yet increased tonicity of smooth muscle cannot be the whole story for the simple reason that we have all of us seen ulcer patients having pain and yet with no deformity of the duodenal cap due to spasm. Secondly, experiments have been performed in which an acid-barium mixture has been placed in the stomach of the duodenal ulcer patient and with the patient under the fluoroscope he has volunteered that pain appears and yet the cap can be seen to fill without the associated spasm.

The acid-pain mechanism would seem difficult to reconcile with the fact that while acid production may be continuous, yet ulcer pain is rhythmic. However, perhaps this objection may be overruled as noted above when it is stated that by varying the concentration of acid introduced into the stomach one can vary the time of appearance and disappearance of the pain.

The immediate effect of the acid is possibly a chemical irritative one which acts to lower the pain threshold of the nerves and when the threshold is so lowered, other things can then cause pain such as spasm or mechanical stimuli. Neutralizing the acid with food or alkali would appear to desensitize the pain mechanism.

The relationship of acid to the **etiology and pathogenesis** of ulcer seems quite clear and we feel that this is most important insofar as treatment is concerned. The relationship of acid to **pain** is unsettled, and it is still far from being clear.

The operation of vagotomy will soon come into great prominence amongst surgeons and internists alike and there is a certain disadvantage in this because the operation may be performed on patients who do not have peptic ulcer. Therefore, before one contemplates using the operation, one should be very certain of the diagnosis. Mistakes are commonly made due to a poor history. All of us know that patients with peptic ulcer occur who give a very atypical story but these are very rare and the burden of proof is certainly on the physician who says that a patient has peptic ulcer when his history is not a good one for the disease.

Occasionally we make a diagnosis of peptic ulcer from the history when x-ray fails to demonstrate a crater. If the history is typical, x-ray mistakes or failures are most likely on a basis of faulty technique or on the basis of the fact that even the most expert examiner using every known technical maneuver may fail to demonstrate about ten per cent of chronic peptic ulcers of average size. In our experience about ten per cent of **undeformed** duodenal bulbs in patients who should have a crater will show the niche **on compression** of the area. Many of these lesions might otherwise be missed if it were not for the use of the spot compression technique with repeated films.

Vagotomy

Approximately four years ago, Dragstedt[1] became interested in an old operation for ulcer that had been tried on the theory that lowering gastric acid by cutting the vagus ought to aid in healing ulcer. The procedure had fallen into disrepute. He found that vagotomy was previously unsuccessful due to various technical factors which mainly involved a failure to section the nerves completely or to section the nerves above the fundus where most of the acid producing cells are located. He performed his first of fifty operations by the transthoracic route, cutting the anterior and posterior vagus nerves through an approach in which the eighth left rib is partially resected. He now uses a transabdominal operation and he states[9] that after mobilizing and retracting the left lobe of the liver that one can easily reach the esophagus at the cardia and by pulling it down from below one can then palpate the vagus for about two to four inches above the stomach. The anterior and posterior branches are cut and allowed to retract. In Dragstedt's series of approximately 145 patients with duodenal ulcers up to November of 1946, there had been no recurrences. The oldest patients have been followed for four and three years and all patients have been put on unrestricted diet without any medication and allowed any use that they cared to make of coffee, alcohol or tobacco. When the vagus is cut the patient who may have entered the operating room with severe pain comes out of the anesthesia with no further ulcer discomfort and healing of the ulcer can be followed over the course of the next several weeks. The operation usually causes an achylia but not always, and occasionally patients are seen who are free of pain and heal their ulcer and yet appear to have a relatively unchanged situation with regard to acid. The operation seems to have fairly little effect on pepsin, but in almost all cases the total volume of the juice is markedly reduced. Following the operation there is a marked depression in gastric tonus and activity and this leads to one of the postoperative complications that one must expect; namely, obstructive symptoms. If the patient has a small scarred pylorus or cap, one is very likely to get postoperatively what amounts to a complete gastric retention and this may become so severe as to require subsequent gastro-enterostomy. For this reason it is necessary for the surgeon to be sure that an adequate passage is present when the vagus is sectioned and if a sufficient opening is not present it is probably best to combine a gastro-enterostomy or pyloroplasty with a vagotomy. This factor will probably cause the transabdominal approach (with its opportunity to palpate the duodenum and if necessary perform accessory procedures) to come into more favor in subsequent years if it can be shown that the end results are as satisfactory as those done by the transthoracic route.

From the point of view of the internist, the indications for vagotomy are as follows:

(1) Intractable ulcer which has been adequately and correctly treated in the patient who has been under complete hospital supervision;

(2) Patients with duodenal ulcer who have had repeated hemorrhages;

(3) Marginal ulcers following subtotal resections or gastro-enterostomies;

(4) As a preventive measure in duodenal

ulcer patients who have had perforations and in whom there is reason to believe that perforation may recur.

(5) It has also proved useful in our hands for patients who have chronic walled-off perforations where the surgeon is unable to remove the affected area, or where he is able to remove it and wishes to avoid the possibility of recurrence.

There are certain definite contra-indications to vagotomy in our opinion. We do not believe that vagotomy by itself should ever be done in gastric or pyloric ulcer. It is obvious that one may be dealing with carcinoma in situ or frank carcinoma with ulceration. The operation of choice in such cases should be subtotal resection. We are aware that one of the large surgical clinics is recommending subtotal gastric resection for duodenal ulcer, together with vagotomy at the same time. Nevertheless, from our point of view, which is that of the internist, we hesitate to have our patients submitted to both these operations unless it is an absolute necessity since the combined operation carries a higher mortality rate. This combination may later prove of value but we are at present quite hesitant to advise it. Another contra-indication to vagotomy per se is any type of stenosing lesion as pointed out above. If the operation is combined with any other procedure which will enlarge the passageway, it is then permissible. The operation is contra-indicated in any patient with uncomplicated duodenal ulcer who has not had an adequate trial of medical treatment, for the reason that if medical management is careful and rational, the results are satisfactory in most cases and may prove superior in the long run to vagotomy.

Finally, the operation is not one that should be viewed lightly, though technically it is an essentially simple procedure, perhaps comparable to an interval appendectomy in its immediate post-operative effect on the patient. We do not yet know whether there may be long-term trophic changes in other viscera including the pancreas and small intestine. Sufficient time has still not elapsed to permit an extended follow-up of large groups of patients with each variety of ulcer complication and to evaluate the respective post-operative results.

We advise the operation with caution, but do feel that it is a dramatic and very great step forward in the management of complicated duodenal ulcer.

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HE WENT TOO FAR

A story is current concerning a professor who is reputed to be slightly absent-minded. The learned man had arranged to escort his wife one evening to the theatre. "I don't like the tie you have on. I wish you would go up and put on another," said his wife.

The professor tranquilly obeyed. Moment after moment elapsed, until finally the impatient wife went upstairs to learn the cause of delay. In his room she found her husband undressed and getting into bed.

Rheumatoid Arthritis and Its Management*

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RHEUMATOID arthritis, "also known as atrophic, proliferative, low grade infections and arthritis deformans," is a systemic disease of which the joint involvement is an "external manifestation." There is good reason to believe that, at least, in many cases a constitutional predisposition may exist upon which this malady may develop and flourish. All of us are familiar with anatomical body type consisting of long thin torso and spindly extremities who in appearance may never seem quite up to par. These individuals with visceroptosis are the people of both sexes who are more prone to develop arthritis of the rheumatoid type than are the more stockily built individuals.

The vast majority of patients when first seen by the rheumatologist are in the chronic stage of the disease. However, the patient in the acute stage is not uncommon. The disease is twice as common in females as in males.

Etiology: The exact cause of this disease is not known. Certain pathological features lend credence to the opinion that it is of an infectious nature. The results of the work done by Cecil and co-workers in which they obtained a rather high percentage of positive blood cultures (68 per cent) have not been duplicated to this writer's knowledge. In our patients we have not been able to isolate pathogenic microörganisms to our own satisfaction from aspirated joint fluid or by means of blood cultures—various media and technics having been employed, notwithstanding. The fact that pathogens have not been isolated consistently from arthritic joints does not disprove that bacterial toxins from the hemolytic streptococcus, for example, may not play an important and direct role as a causative agent. The finding of specific agglutination and precipitation reactions to the type A hemolytic streptococcus in the sera in a majority of patients with rheumatoid arthritis lends support to this theory.

Allergy as an etiologic factor has not received sufficient emphasis in our opinion. There are entirely too many arthritic patients who give symptoms and signs of an altered tissue response in different systems of the body to be ignored. One must keep in mind that, for a patient to be allergic he does not necessarily have to have clinical asthma or hay fever. It seems just as logical that intra-articular tissues may have an altered response to some allergin as is the case with tissues composing the pulmonary or gastro-intestinal systems. All rheumatologists no doubt have seen spectacular improvement, where the degree of pathologic change has not reached an irreversible stage, in patients with swollen joints following removal of an offending allergen. Further and more painstaking observation and research is needed in this field before definite conclusions can be drawn.

Predisposing factors: Trauma, physical and mental fatigue, emotional upsets, environmental influences, dietary deficiences, exposure and habitus, have all been indicted as contributory factors to the development of rheumatoid arthritis.

Symptomatology: The disease may strike suddenly with pain, swelling, local and systemic fever, with multiple large and small joints involved. In fact, this is a common picture observed in the juvenile (Still's disease) form of the disease.

The majority of the patients when seen complain of a gradual onset of swelling, pain and stiffness of one or more joints, usually of fingers, wrists, knees and balls of feet. Fusiform swelling of the proximal interphalangeal joints of the fingers in a young to middle-age female is almost pathognomonic of rheumatoid arthritis. There may be natural remissions and exacerbations seen in even untreated patients.

The average duration of arthritis was three and three-fourths years in a critically analyzed group of sixty patients admitted to the Campbell Clinic. The patient with the shortest duration was one month, while the one with the longest duration was eighteen years. The average age of the sixty patients, including three cases of Still's disease, was thirty-nine and three-tenths years. Excluding the Still's disease patients the average age was forty-one years. There were twenty-three males and thirty-seven females in this group. The youngest was two years old and the oldest was sixty-two years old.

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All too often we see the arthritic after marked damage to the intra-articular structures has occurred with the accompanying deformities as a result of contractures, thus giving to the disease the term "arthritis deformans."

Pathology: To Nichols and Richardson in their monumental piece of work published in 1909, must go the credit for our modern, present-day conception of the pathologic process which takes place in the rheumatoid arthritic joint. No one to our knowledge has materially altered or improved upon their findings. The joint disease manifests itself by first involving the synovia and periarticular structures resulting in proliferation, swelling, lymphocytic and plasma cell infiltration. The lymphocytes tend to collect in large discrete masses and about blood vessels. Some effusion into the joint is usually present. Later, if the process advances a vascular membrane (pannus) may grow across the articular cartilage resulting in destruction of the cartilage. Simultaneously, there is endosteal proliferation and vascular granulation tissue developing in the adjacent epiphysis just beneath the articular cartilage. This granulation tissue interrupts and breaks through the subchondral bone plate, thus encroaching upon and destroying the articular cartilage from its epiphyseal side. These two intra and extra articular processes eventually meet, resulting in a fibrous ankylosis of the joint. Still later bone trabeculae may replace the fibrous tissue thus obliterating entirely the joint space with solid bony ankylosis. The time evolved in the production of these changes in a given joint may extend into years. On the other hand the pathologic process may develop with such speedy dispatch as to destroy the articular cartilages and portions of the adjacent epiphysis in a much shorter time.

Clinical pathology: There is usually an iron deficiency type of anemia present. Leucocyte count is usually normal except in the juvenile form where there may be a leucocytosis. Lymphocytosis is the rule in the chronic stage. The erythrocyte sedimentation rate is almost always found accelerated. This is a very important finding. It is a great aid in prognosticating the patient's response to therapy. If the sedimentation rate is "slowing up" it is a good omen. If after a period of treatment the sedimentation rate increases, one can usually expect an exacerbation of the disease. Urinary findings are generally within normal limits.

Differential Diagnosis: The greatest difficulty is met with in differentiating rheumatoid in the young person (Still's disease) from acute rheumatic fever in children. Still's disease has been reported as early as the fifteenth month of life. It is usually seen in the first two to eight years of life. In both diseases the affected joints present local fever, exquisite tenderness and pain, the latter a little more intense perhaps in acute rheumatic fever; swelling, greater in rheumatoid arthritis; skin over joints present more rubor in rheumatic fever; fleeting pain from joint to joint with older affected joints clearing up, prone to occur in rheumatic fever and splenomegaly, seen as a rule only in Still's disease. Fever, sweating and erythrocyte sedimentation rate is similar in both diseases. The heart is prone to become involved in rheumatic fever. A favorable response to large doses of salicylates in rheumatic fever as against negative results in rheumatoid arthritis is a most important differential therapeutic test.

The almost complete disappearance of acute gonorrheal arthritis from clinic practice is hardly any longer a differential diagnostic problem.

Reiter's disease, although rare, may stimulate rheumatoid arthritis very closely. There may be multiple painful swollen joints, conjunctivitis and urethritis with local and systemic fever. It is believed to be of gonococcal origin but one cannot demonstrate the microorganism. All of them get well as a rule.

To differentiate acute rheumatoid arthritis from sepsis should not, as a rule, tax the diagnostic acumen of an astute observer. One can usually locate the portal of entry of the infection and almost invariably recover the offending bacterium from the blood stream.

Metabolic arthritis (Gout) should not give the experienced observer any diagnostic difficulty, but the writer has seen confusion arise in the minds of some physicians at this point.

Treatment: General survey—The first and most important consideration in the treatment of an arthritic is to make a survey of the "whole" patient. His physical, mental and spiritual processes must be critically examined and the weak points attacked with all the means available. His social and economic status is often low on admission to a clinic although this disease by no means is confined to those people in this stratum of society. Every student of this disease is well aware of the fact that many patients once well-to-do, have been pauperized through the medium of quackery or misguided treatment.

Is it not high time that the people of our country come to the aid of an estimated 7,000,000 of her citizens afflicted with the terrible disease, chronic arthritis? An estimated 132,000,000 "work days" are lost annually attributable to this disease. Only one group of diseases exceeds it in this respect, namely; nervous and mental diseases. Is it because there is no contagious element about it that no national program has been organized to aid its victims who are unable to help themselves? The writer recently received a communication proposing a "build-up" looking to support for a campaign to a) aid the blind, b) the epileptics and c) the cerebral spastics. In reply the writer praised the high and laudable purposes set forth and pledged his support and concluded with this statement: "A group of our citizens equal in number probably to all those put together, embraced in your communication, afflicted with arthritis and living among us and who are just as deserving and in as great need of help, and not a word of reference made to them, did we find in your letter." Why do we not as a nation, do something to help this group of patients? The answer probably lies in the "defeatist attitude" which has been so prevalent in the minds of the medical profession almost from time immemorial, namely; when a human being, a victim of arthritis, walks into a physician's office, the physician, realizing his utter helplessness as far as materially helping his patient, gives him a prescription for one of the common analgesic drugs and sends him on his miserable way. Praise be to the efforts of some persevering physicians, that picture is changing today. The future of the arthritic is just as bright as the degree of public opinion becomes aroused to attack the problem by some such plan as is being done for a national scourge like tuberculosis.

Every possible focus of infection should be eliminated, "at the proper time." Regardless of what part, if any, the infection may be playing in an etiological way, we believe it should be removed. The proper time may not be right away. On the contrary it may be very improper to subject the debilitated patient to removal of teeth or tonsils when that very experience may lead to further and irrecoverable damage. One cannot make a hard and fast rule as to the time for these procedures to be carried out. One's own experience is his best guide.

Bacterial Antigens: Vaccine therapy is still being overworked in our opinion. We do not deny the apparent, hypothetical though it may be, close association of the hemolytic streptococcus with the arthritic. But results are what count. We must admit discouragement from their use alone, and have long since stopped using them. However, there may be the occasional patient who may be benefited from an autogenous bacterial toxin antigen.

Blood Transfusions: A transfusion of blood is the best dose of medicine one can give the debilitated patient. Debility and anemia of the ion deficiency type, usually, run hand in hand. Repeated transfusions are necessary in some patients. During the past three years we have given several hundred transfusions without a single chill and fever type of reaction.

Penicillin and Steptomycin: We have seen no benefit derived from their use and therefore do not use them in the treatment of rheumatoid arthritis.

Vitamins: We have yet to see a rheumatoid arthritic patient derive any definite benefit from any of the highly concentrated vitamin D preparations, including ertron. Of the latter, we have given as much as 1,000,000 units daily. None of the vitamin preparations should be prescribed with the idea of ameliorating joint symptoms to any appreciable degree.

Antireticular Cytotoxic Serum: We have had insufficient experience with this preparation prepared by Bogomoletz to draw a conclusion. However, Hench stated the Empire Rheumatism Council of Great Britain does not recommend its use. Bogomoletz claimed for it a certain cure in acute arthritis provided the heart was not involved.

Physical Medicine: No patient with rheumatoid arthritis should be deprived of the value of this most important modality. Time and space will not permit a thorough discussion of this subject. Suffice it to state, the average hospital, large or small, is pitifully lacking in equipment and trained personnel to practice the art and science of physical therapy. Heat lamps, massage, paraffin baths, diathermy, guarded exercises, splints and braces are of the utmost importance.

Artificial Fever: This is of questionable value in rheumatoid arthritis and we no longer use it.

Drugs: Hematonics in the form of ferrous sulphate and iron and liver combinations are essential in combatting anemia. It is our custom to prescribe these drugs concurrently with chrysotherapy.

Neostigmine (Prostigmine): This drug in our hands has not been of any material value except in a few patients who received large doses along with atropine and who stated they received some relief from muscle spasm. We doubt its feasibility.

Chrysotherapy: To Jacques Forestier of France who introduced the use of gold salts in the treatment of arthritis in England in 1934 must go the credit for popularizing this form of therapy. In November, 1934, the writer was present when Forestier presented a very encouraging report on his experience with gold therapy in rheumatoid arthritis at the Southern Medical Association Meeting in San Antonio, Texas.

Several preparations of gold are on the market, for example, gold sodium thiosulphate, gold sodium thiomalate, gold sodium thioglucose and recently, lauren was introduced. We have used exclusively in our work, gold sodium thiosulphate, (37 per cent metallic gold) and gold sodium thiomalate (myochrysine 50 per cent metallic gold). One seems to have no advantage over the other as to relative toxicity. Neither does the amount of gold a patient has had seem to bear any relationship to the degree and time of toxic reactions.

In spite of a voluminous literature on this subject, the exact mode of action and the real value of gold salts in rheumatoid arthritis is yet to be determined. However, of all the agents we have used in the treatment of rheumatoid arthritis, gold salts have done more to alleviate and improve the plight of these patients than any one or a combination of other agents which we have used. Let it be understood that we do not propose it as a cure but do strongly endorse it as being of great therapeutic value.

Toxicity: Unfortunately gold is a toxic metal and when used the patient must be kept under strict surveillance. The physician who prescribes gold salts without making weekly examinations of the blood and urine is laying his patient liable to serious if not irreparable damage, even death.

Block, Buchanan and Freyberg have shown that gold salts are eliminated very slowly by animals through the kidneys and gastrointestinal tract. Furthermore they found most of the gold that was not eliminated was stored in the liver and kidneys. These facts need to be constantly kept in mind when giving gold.

A number of deaths attributable to gold have been reported. Most of these occurred in the earlier days of its use being as high as 3 per cent in some series.

We have had no fatalities among our patients. However, from Table I one can see fifteen (25 per cent) of sixty patients analyzed developed toxic reactions. These range from the mildest reaction of one small ulcer in the mouth to the severest, consisting of extreme salivation with loosening of teeth (one case), multiple furuncles (two cases), and exfoliate dermatitis (one case). Some of the patients who had the severest reactions are not included in this group as they had had less than 300 milligrams of gold when the toxic reaction occurred.

One should look out for skin rash, purpura, gingivitis, stomatitis, glossitis, enterocolitis, headache, fever, albumin and red blood cells in the urine, anemia and depressed bone marrow with agranulocytosis, in the gold-treated patient.

The Treatment of Toxic Reactions: Omit further gold therapy, at least, for the present. Whether it is to be used again in a given patient depends upon type and degree of reaction and if then, in very small doses well spaced. Calcium gluconate given concurrently with the gold salt has been recommended. The milder toxic manifestations usually clear up without special treatment, while the severer ones require special attention. In case agranulocytosis develops prompt administration of penicillin intramuscularly every three hours until the hemogram returns to normal, is a specific. If purpura hemorrhagica should arise splenectomy should be seriously considered. Vitamin K or transfusions are not recommended for this complication.

According to Stericker, chrysotherapy should not be given patients with "skin disorders exclusive of psoriasis, hemorrhagic tendencies, nephritis, hepatitis, ulcerative colitis, diseases of hemo-leucopoetic systems and in marked allergic states."

Dosage: It is interesting to observe that as rheumatologists have become more experienced with gold salts therapy there has been a uniform gradual reduction in initial and succeeding dosage. Whereas at the clinic we formerly employed from 50 to 100 milligrams doses, and in the course of two and a half to three and one half months would have given a patient one to one and five-tenths grams of the gold salts, now, we never give initially more than 15 to 25 milligrams and a maximal dose of 50 milligrams thereafter. It is the concensus that a smaller dose given over a longer period of time is better than to give a larger dose for a shorter period. We have ceased to think of treating a patient with so many courses of one to two grams each but prefer to extend the treatment over longer periods of time without intervening rest periods as was formerly in vogue.

TABLE I
THE THERAPEUTIC RESULTS FROM GOLD SALTS IN RHEUMATOID ARTHRITIS

Age Group	No.	Sex			Results			Toxic Reactions	
		M	F	I*	VMI	Good	Excellent	Yes	No
1-9	2	1	1			1	1		2
10-19	4	1	3	1	2	1		1	3
20-29	5	2	3	2	3			2	3
30-39	20	9	11	6	7	3	4	6	14
40-49	8	3	5	2	2	4			8
50-59	19	7	12	9	6	3	1	6	13
60-69	2		2			2			2
Total	60	23	37	20	20	14	6	15	45
Percentage	100	38.33	61.66	33.3	33.3	23.3	10	25	75

*I—Improved; VMI—Very Much Improved.

Results from Chrysotherapy: We have tried conscientiously to divide the results of treatment in sixty patients who received, exclusive of one case of Still's disease, not less than 0.3 gram of a gold salt into four groups, namely; 1) improved (I) meaning the symptoms and signs had definitely diminished and the patient was able to dress himself and be less dependent on others; 2) very much improved (VMI), meaning pain, swelling and soreness had subsided to the extent the patient could resume almost full work again; 3) good, meaning full duties resumed with minimal symptoms and signs, and 4) excellent, meaning that in some patients there was no residual left while in others there was slight limitation of motion in one or more joints. This grouping must of necessity be an arbitrary one.

Just as with every other diseases the earlier chrysotherapy is begun, better will be the results and probably fewer relapses or exacerbations will be seen. The number of patients with "good" to "excellent" results will increase too, the earlier the treatment is begun.

In none of sixty patients in our series who received as much as 0.3 gram of a gold salt was there no improvement (Table I). There were twenty ((33.3 per cent) of the sixty patients classified as "improved." In some of these, the gold had to be stopped much sooner than was desired because of toxic reactions. One patient, a school teacher in this group, received a total of 3,900 milligrams of gold sodium thiosulphate over a five-year period. She has missed no time from her school work throughout the past six and one-half years, the time she has been under our supervision. There was very much improvement in her condition during the first three years of treatment but some regression has taken place during the past two years.

Into the "very much improved" group fell twenty (33.3 per cent) of the patients. Some of these patients were very ill, including one case of Still's disease, and had it not been for chrysotherapy, by the usual standards of measure, they would have been relegated to the class of the hopeless invalids. The case of Still's disease was a little eleven-year-old girl who was critically ill, apparently hopelessly crippled, and who amazed all who saw her response to chrysotherapy. It is not unusual to hear a patient remark, "It's almost a miracle the way I feel now compared to the way I felt before receiving gold." While trying to get the patient and the surgeon both to agree to the performance of a synovectomy, we have seen the swelling in a knee, for example, subside completely under gold therapy. No other known medicinal agent will do that for an arthritic joint.

There were fourteen (23.3 per cent) of the sixty patients whom we classified as obtaining "good results." Nothing is quite so satisfying to the patient or the physicion as to see a patient who once was destined to almost certain invalidism return to a sufficient state of health which will permit resumption of former activities again. One of the fourteen patients in this group was a case of Still's disease. This patient was a two-year-old girl who had feet, ankles, knees, wrists and fingers involved. She walked with great difficulty and was emaciated when treatment was begun in January, 1944. The only evidence that remains of former trouble is slight contracture of some of the fingers. It is these patients in whom we have seen our most glorious results.

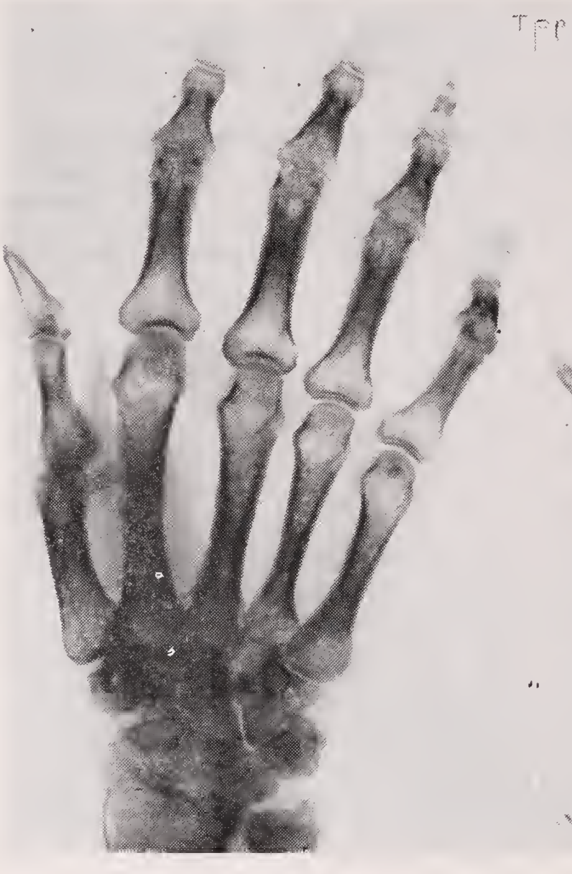
Fig. 1 a. No. 71083: Mrs. I. J. W., aged forty-six, had had arthritis four years. Roentgenogram made 12-7-45 shows osteoporosis and soft tissue swelling.

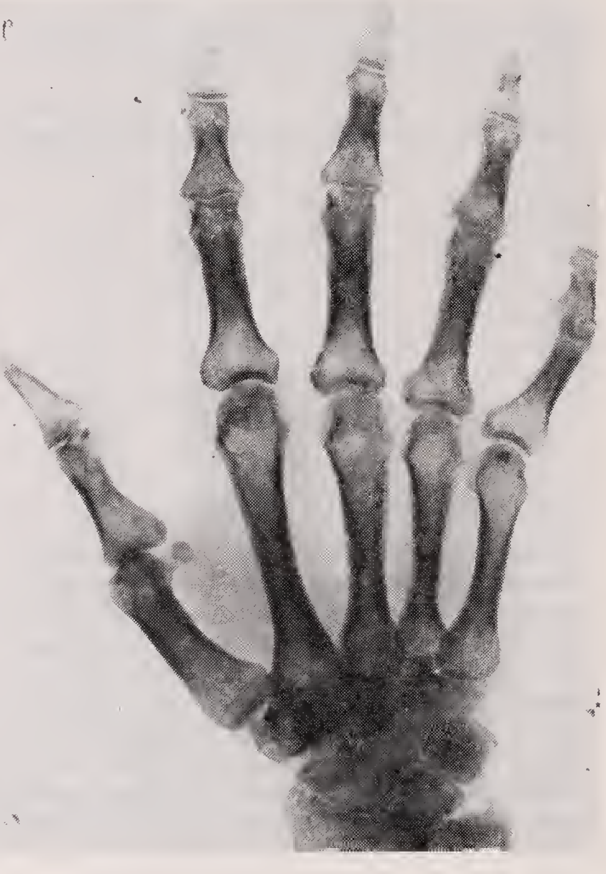
Fig. 1 b. 71083: Mrs. I. J. W., roengenogram made 3-4-47, fifteen months later after having 800 milligrams of gold. Note recalcification of the bones of wrist, hand and fingers. Less soft tissue swelling also.

Of the six (10 per cent) patients who received "excellent results," one was a case of Still's disease who had had symptoms for five months. He was four years old and had been treated for acute rheumatic fever, as is so often the case, and kept in bed for the last three of the five months before coming to the clinic. He has had no treatment for three years now and there has been no visible evidence of relapse or exacerbation.

There were fifteen (25 per cent) of the sixty patients who developed some kind of a toxic reaction. This reaction ratio is in keeping with other published reports. These toxic reactions have manifested themselves in the form of a dermatitis, ulcers in the mouth and on the cornea, capillary injection of the sclera, furuncles or subcutaneous abscesses, albuminuria and red blood cells and anemia.

Bone Changes Following Chrysotherapy Treatment: Recalcification takes place in direct proportion to return of function of the affected parts. This is especially true with reference to the small bones of the wrists, hands, and fingers (Fig. 1, a and b). The gold plays an indirect part in this in that it facilitates return of function of the affected part. If the arthritic could be gotten under treatment within a few months of onset of symptoms we believe many more cases could be, at least, arrested and some perhaps cured.

Orthopaedic Surgery: The value of reconstructive surgery in selected cases is beyond question. This is especially true in the release and relief of contractures due to capsular and pericapsular fibrosis and in the reestablishing of motion in ankylosed joints such as the hips by means of arthroplasty. There are many other ways in which surgery may be used to great value in the arthritic patient.

Relapses and Exacerbations: This is one of the discouraging features, met with by all who treat rheumatoid arthritis. There has been no way found whereby relapses or exacerbations may be prevented. The fact that gold is eliminated very slowly from the body, it having been found in the urine ten months or longer after the last dose was given and the trend being to give smaller doses of gold and treat the patient over a longer period of time offers a ray of hope in this direction. A further study of the allergic angle with the hope of eliminating offending allergens may prove beneficial, also.

One should make very clear to his patient two points: First, the treatment is fraught with danger even in the hands of the experienced physician and, secondly, it is not offered as a cure but, in a large percentage of patients they may expect worthwhile benefit.

CONCLUSIONS

1. Rheumatoid arthritis is a systemic disease characterized by multiple joint involvement, anemia, loss of weight and general debility. Its onset may be acute but is usually insidious.

2. The etiology of rheumatoid arthritis is unknown although many believe the hemolytic streptococcus is a factor.

3. All foci of infection should be removed "at the proper time."

4. A positive allergenic history is a frequent finding.

5. Differential diagnosis is chiefly concerned with separating rheumatoid arthritis in the child (Still's disease) from rheumatic fever, and Reiter's disease in the adult.

6. In outlining the plan of treatment the "whole patient" must be considered.

7. The economic and social aspects of the disease have been woefully neglected.

8. Of all the therapeutic agents used in this disease, those most worthwhile may be cataloged as follows: 1) rest, 2) balanced diet, 3) blood transfusions, 4) physiotherapy, 5) hematonics, and 6) chrysotherapy.

9. An analysis of sixty patients is presented on a basis of therapeutic results and toxic reactions observed from chrysotherapy.

10. Gold salts, although dangerously toxic, and not proposed as curative agents, are the best therapeutic agents known today.

11. The exacerbation and relapse rate is far too high in rheumatoid arthritis regardless of type of treatment.

12. No one should attempt to use gold salts until he has familiarized himself with its good and bad effects and is in position to give his patient proper laboratory tests.

13. Every patient should be informed of the risk he will take and no cure promised, before treatment is prescribed.

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Ticks and Tick-Borne Diseases in Southern Mississippi

1942 to 1946

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THIS STUDY is based upon field data and records taken by the author in southern Mississippi during a sojourn as entomologist in the U. S. Army during World War II. The areas in question comprise Camp Shelby near Hattiesburg and Camp Van Dorn at Centreville, Mississippi. All data taken prior to 1945 at the former locality were the work of Dr. C. D. Michener. The author is responsible for all collections and identifications made from 1945 to 1946. However, the very extensive records from Camp Van Dorn were based on specimens and data taken by the author during the whole of 1944. All clinical data were obtained from the offices of the hospital surgeons of the two camps in question. Thanks are due to many army personnel, some of them no longer in the service, for various helps and kindnesses in aiding this study. Especially to be mentioned are Col. M. J. Blew, Major S. J. Carpenter, Col. A. W. Dawson, as well as Mr. Walter Parker, U. S. Public Health Service, and others.

In 1943 and subsequently ticks were collected from army hospital patients in southern Mississippi. Field studies made in localities from whence the ticks were picked up by the human hosts seemed to indicate that one species was mainly responsible for the transmission of tick-borne diseases, and this species proved to be **Amblyomma americanum.** Indeed **Dermacentor variabilis** was seldom taken, and this no doubt because it is not common except in cooler climates than are to be found in the southern part of Mississippi. Ticks were taken not only from human hosts but also from dogs, cattle, horses, and rabbits. In one instance it is to be noted that a war dog sent to Camp Van Dorn from Front Royal, Virginia, was still carrying engorged specimens of the wood tick, **Dermacentor variabilis.** Although Camp Van Dorn had a high record of disease-bearing ticks and a very positive record of clinical cases, the same cannot be said for Camp Shelby. In fact an over-proportion of the brown dog tick, **Rhipicephalus sanguineus,** was collected there, which seems to argue for the efficiency of GTA dip, and for the long confinement of these dogs in heavily infested kennels.

The clinical information obtained from southern Mississippi shows that Rocky Mountain spotted fever and tularemia were the two diseases transmitted within the area as result of tick infestations. No livestock diseases were detected in spite of the large number of ticks found on various species of domestic animals. Tick-bite traumatism was in evidence both in man and in animals. The types of tularemia that occurred were typhoid-pneumonia and glandular, mainly the latter. The autopsy of the one fatality from tularemia showed a tularemic abscess of the right lung, adrenal necrosis, and autolysis of the stomach. The one fatality resulting from Rocky Mountain spotted fever showed the usual clinical picture.

Year	Locality	Number of cases	Fatalities
Rocky Mountain Spotted Fever			
1943	Camp Van Dorn	2	0
1944	Camp Shelby	2	1
Tularemia			
1942	Camp Shelby	1	0
1943	Camp Van Dorn	8	1
1944	Camp Van Dorn	1	0
1945	Camp Shelby	2	0

During the period under consideration in this paper a total of 2794 ticks were collected. Out of this number 2350 were collected at Camp Van Dorn. The number of ticks taken from hosts there in 1944 were 405, while 233 of these were removed from human beings. The two highest months as to total ticks were July with 1116 and August with 534, although in both months only one species was taken, **Amblyomma americanum.** In contrast with this April was the month when the greatest number of species was found.

The following list of species covers all ticks of medical importance in the southern part of Mississippi. Almost none of the species recorded for rodents, bats, or birds are listed here, since they are not thoroughly known, and seem to have little bearing on medicine as it affects man or domestic animals.

1. **Ambylomma americanum** (Linn.). February to October. Wilkinson County: Centreville, Woodville, Homochitto National Forest. Amite County: Camp Van Dorn, Gloster, Liberty. Total ticks taken in these two counties in 1944 was 2351. Adams County: Second Creek, Natchez. Forrest County: Camp Shelby, Hattiesburg. Total ticks taken in this county, 1944-1946, 9. Hosts: Man, dog, cow, horse.
2. **Amblyomma maculatum** (Koch). June to August. Forrest County: Camp Shelby, Hattiesburg. Total ticks taken, 1944-1946, 4. Hosts: Man, dog.
3. **Dermacentor variabilis** (Say). April through July. Wilkinson County: Centreville; Camp Van Dorn. Total ticks taken, 5. Forrest County: Camp Shelby. Total 13. Hosts: Dog.
4. **Haemaphysalis leoporis-palustris** (Pack.). February. Forrest County: Camp Shelby. Total ticks taken, 3. Hosts: Rabbit.
5. **Ixodes scapularis** (Say). January through March; November to December. Wilkinson County: Centreville. Amite County: Comite Creek, Camp Van Dorn. Total ticks taken in these two counties, 33. Forrest County: Camp Shelby. Total ticks taken 30. Harrison County: Biloxi. Hosts: Dog, cat.
6. **Rhipicephalus Sanguineus.** (Latr.). January through May; November to December. Wilkinson County: Centreville. Amite County: Camp Van Dorn. Total ticks taken from these counties, 3. Forrest County: Camp Shelby. Total ticks taken, 386. Hosts: Dog.
7. **Boophilus annulatus** (Say). This species has not been recorded from southern Mississippi since the tick eradication program aimed at the Texas cattle fever tick was terminated.

THE ULTIMATE TEST

The ultimate test of the efficiency of a nation's medical care system is the health of the people. Judged by that accurate yardstick, the United States has been making enormous progress in the conquest of disease.

According to a leading life insurance company, which issues elaborate statistical analyses of matters affecting the national health, it is probable that 1947 will establish a record low for mortality. The death rate during the first six months of the year among policyholders was almost 4 per cent under the same period in 1946. In large part this was the result of sharp declines in deaths from influenza, pneumonia and tuberculosis.

So fine a record is not an accidental miracle, but the barometer of the progress being made in both preventive and curative medicine in this country. It furnishes an unanswerable rebuttal to those who are seeking to socialize or regiment the practice of medicine in America.

The remarkable growth of membership in voluntary prepaid medical plans is undoubtedly responsible for much of the improvement in our health. These plans offer the finest medical and hospital care at a cost within the reach of all workers. They protect the right of the patient to go to a doctor of his own choosing. They are completely free from the dead hand of politics. And they are a typical modern example of the ability of the American people to solve their own problems without turning to the government with their hats in hand.

The Epidemiology of Murine Typhus in Mississippi in 1946*

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INTRODUCTION

Typhus fever was recorded for the first time in Mississippi morbidity data in 1917 when nine cases were reported in three Delta counties. Except for the reporting of these cases we have not been able to find more information about them. Typhus is not reported again in the State Board of Health morbidity data until 1933. Since that date the number of cases has increased as shown in Table I.

It is impossible to say just how long murine typhus has been present in Mississippi. It seems likely that it was present for many years before it was recognized. Typhus fever agglutination tests (Weil-Felix) are reported for the first time in the 1933-35 Biennial Report of the State Hygienic Laboratory. Nine tests were done in this biennium. Dr. T. W. Kemmerer, the Director of Laboratories at that time, urged physicians to submit sera on patients who had febrile illnesses that did not appear to be typhoid fever, or other sickness. Since that time more and more physicians have made use of the State Hygienic Laboratory in arriving at a diagnosis of some of the infectious febrile diseases.

TABLE I

Annual Morbidity Report—Typhus Fever

Year	White	Black	Total
1933	1	0	1
1934	0	0	0
1935	5	0	5
1936	6	0	6
1937	12	1	15
1938	23	2	25
1939	44	5	49
1940	44	7	51
1941	58	7	65
1942	54	5	59
1943	125	7	132
1944	157	21	178
19b5	214	21	235
1946	112	15	127

1946 SURVEY

Murine, or endemic, typhus was first reported at Atlanta, Georgia, in 1913. Since then the disease has been reported in all of the Southern states, particularly along the Atlantic and Gulf Coasts. For some time it was believed that the disease did not occur very far inland. But recent studies by Topping and Dyer (1943) present evidence that murine typhus has very likely been overlooked in inland cities like St. Louis. At the same time these authors report on cases occurring in Richmond, Virginia, East Cleveland, Ohio, Cincinnati, Ohio, and Washington, D. C. Freed, Jordan and Eckhoff (1937) reported a case of typhus in Des Moines, Iowa. Topping and Dyer (1943) point out that with the disease definitely present in Missouri, Iowa, and Ohio, it is likely that murine typhus is present in other inland states.

In Mississippi Murine typhus occurred most frequently in the coastal and southern tier of counties below the Jackson-Meridian line. Only sporadic cases were reported for the northern counties during the 1930's. The cities in which the disease occurred were those along the railroad lines coming out of New Orleans and along the Mississippi River. Thus, Osyka, Magnolia, McComb, Summit, Brookhaven, Hazlehurst and Jackson, all on the Illinois Central Railroad, were cities in which a large number of cases occurred. Along the Southern Railroad, Picayune, Poplarville, Hattiesburg, Laurel and Meridian were typhus-ridden communities. The Louisville and Nashville Railroad passes through Bay St. Louis, Gulfport, Biloxi and Pascagoula where typhus has long been prevalent. Sandy Hook, Columbia and Jackson communities with a good bit of typhus are on the Gulf, Mobile and Northern Railroad. All four of these railroads have a starting terminal in New Orleans, a city with a long history of typhus.

Lucedale and Laurel are cities in which much typhus has occurred. Both of these cities are on a line of the Gulf, Mobile, and Northern Railroad coming out of Mobile, Alabama, where a large number of typhus cases have been reported over the years. Natchez and Vicksburg, both of which are river ports on the Mississippi, have had a good bit of typhus. It is our belief that typhus-infected rats travelled in railroad cars and on riverboats coming out of New Orleans and Mobile and established the infection in the rat population. It was not long before human beings came down with the disease.

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In 1936 the state embarked on an extensive road-building program. Modern highways have reached many out-of-the-way communities. Trucks carrying rats—as well as grains and produce—have undoubtedly played a part in carrying typhus to communities that had not experienced the disease previously.

Since 1940 typhus fever has been on the increase in the northern part of the state. Previous to this date only sporadic cases were reported. But in 1941 eight cases were reported in Pontotoc. This city continued to have typhus until, to date, thirty-three cases have been reported. It is interesting to note that the Gulf, Mobile and Northern Railroad originating in Mobile runs through Pontotoc.

At Canton, twenty-three miles north of Jackson and on the Illinois Central Railroad, an outbreak of seven cases occurred in 1945. Winona, ninety miles north of Jackson and on the Illinois Central Railroad, had an outbreak of seven cases in 1946. At Itta Bena, some thirty-five miles west of Winona, five cases of typhus occurred during the same months as did those in Winona. One or two cases had been reported in 1940 and 1941 from Canton and Winona. Itta Bena had not had any previous experience with typhus although the disease had been reported from Greenwood, seven miles to the east. It seems significant to us that outbreaks of several cases or more in one year should occur in these communities in the northern counties. To us, it indicates that typhus is firmly established in the rat population of these communities. Further, it indicates that in communities where no human cases have yet occurred, the infection may exist in the rat population. But the infection rate in the rats is still not high enough to result in human cases.

Early epidemiological studies on murine typhus showed that the disease was mainly a disease of cities and towns (Meleney 1941). Baker, McAlpine and Gill (1934) concluded from their studies on the disease in Alabama that "From the urban centers the disease has spread until much of the incidence is now in purely rural areas and among people who could not have obtained their infection except at home." The series of cases that were studied by us in 1946 bear out this statement. Of 127 cases investigated, thirty-six, or 28.3 per cent most probably acquired their infections in purely rural environments. The fact that a reservoir of infection does exist in rats living in rural areas will be proved by data on the incidence of murine typhus in rats trapped in such areas.

The disease, however, does occur principally in small towns and cities. Such outbreaks as occurred in Winona, Itta Bena, Pontotoc, Pelahatchie and Canton are evidence of this fact. These outbreaks center about a feed store, or general store, where the rats have been permitted to increase to large numbers.

The geographical distribution of typhus cases as they occurred in 1946 is shown in Map No. 1 and Table II. From these data it can be seen that in the southern counties where typhus has been a problem in former years the disease is still occurring more frequently than where it did not exist previously. Three counties in the northern part of the state that have shown a marked increase are Leflore, Montgomery, and Washington. The increased incidence in this latter county will be commented upon later. Some of the southern

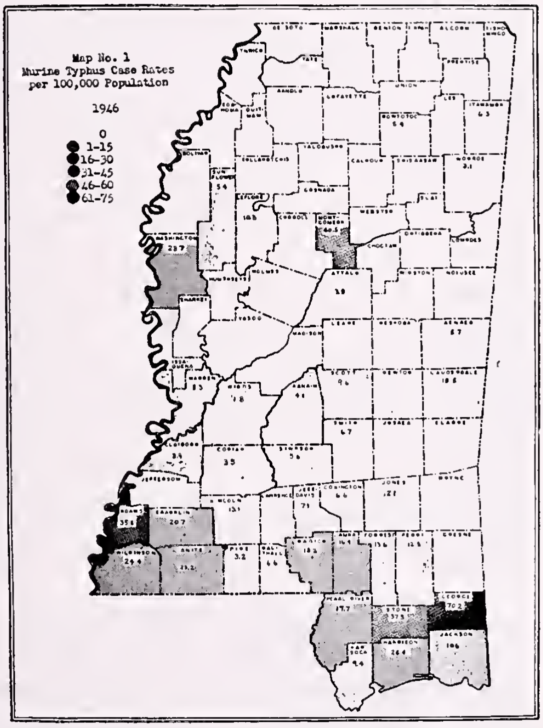


TABLE II

Typhus Case Rates per 100,000 Population
(Based on 1945 Estimated Population)

County	No. Cases	Rate
Adams	9	35.60
Amite	4	23.23
Attala	1	3.98
Claiborne	1	8.91
Copiah	1	3.49
Covington	1	6.57
Forrest	6	13.56
Franklin	2	20.68
George	6	70.24
Hancock	1	9.39
Harrison	16	24.42
Hinds	2	1.80
Itawamba	1	6.32
Jackson	4	10.56
Jeff Davis	1	7.15
Jones	1	2.13
Kemper	1	5.71
Lamar	2	16.93
Lauderdale	6	10.52
Leflore	5	10.33
Lincoln	3	13.08
Marion	4	18.17
Monroe	1	3.06
Montgomery	6	40.45
Pearl River	3	17.73
Perry	1	12.30
Pike	1	3.15
Pontotoc	1	5.42
Rankin	1	4.09
Scott	2	9.56
Simpson	1	5.59
Smith	1	6.69
Stone	2	37.29
Sunflower	3	5.44
Walthall	1	6.62
Warren	3	8.32
Washington	18	28.68
Wilkinson	4	24.42

TABLE III

Typhus Case Rates in Selected Counties
Rate per 100,000 Population

County	1941	1942	1943	1944	1945	1946	1945 Population
Harrison	3.0	4.6	65.6	47.3	65.6	24.4	65,505
Jackson	0.0	0.0	2.6	15.8	47.5	10.6	37,872
Forrest	13.6	11.3	27.1	27.1	29.4	13.6	44,238
Pike	6.3	12.6	47.3	34.6	31.4	3.1	31,737
Jones	12.8	8.5	4.3	23.5	49.1	2.1	46,790
Hinds	4.5	4.5	1.8	22.5	13.5	1.8	110,836
Warren	0.0	5.5	13.9	13.9	19.4	8.3	36,054

counties experienced a decrease in incidence over previous years. These counties are Harrison, Jackson, Forrest, Pike, Jones, Hinds, and Warren. This fact is evident from the data in Table III.

This decrease may be attributed partly to a return to more normal conditions following the war years. During those years these counties, particularly the coast counties, experienced a large influx of civilian and military population. This increased population put a heavy burden on the sanitation workers in those counties. Garbage disposal suffered greatly. And when large amounts of garbage are permitted to accumulate and provide food for rats, the rat population will increase a great deal. With an increase in the rat population and probably an increase of typhus in this population human beings become more exposed to the disease, resulting in greater typhus morbidity rates.

Some of the decrease in typhus in these counties can be attributed, however, to the initiation of a typhus control program making use of such procedures as rat poisoning, DDT dusting and vent-stoppage. The rat population in these communities has been greatly reduced, with a resultant decrease in exposure to the disease.

Data was obtained from the reported cases of typhus as to their movements and habits in order to establish the most probable source of infection. These data are presented in Table IV.

From these data it is apparent that urban residences have contributed to a large percentage of cases. Our information is in keeping with Irons and Cox (1946) who traced many infections to the residential areas of Austin and San Antonio, Texas. The movie houses have been a foci of infection in some communities. Many of these theatres have an abundance of rats because of popcorn, peanuts, and candy that are strewn on the floor during shows. We believe that these theatres must use every measure to combat rats and should spray DDT regularly to kill fleas and other vermin. Feed stores, general

TABLE IV
PROBABLE SOURCES OF INFECTION

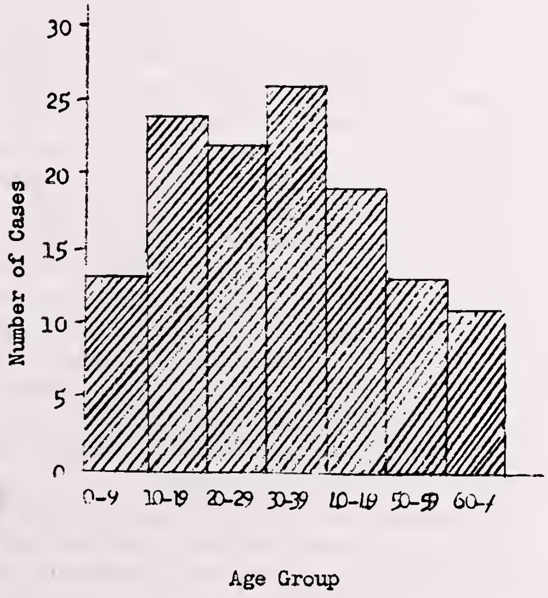
Source	No. Cases	Pct. of Total
Urban		
Feed store	3	2.4
General store	6	4.7
Cafe	5	3.9
Drug store	3	2.4
House	34	26.8
Movie	6	4.7
Barn	3	2.4
Building	10	7.9
Bakery	1	0.8
Unknown	17	13.4
Rural		
Barn	15	11.8
House	15	11.8
General store	5	3.9
Unknown	1	0.8
Out of State	3	2.4
Total	127	

stores, cafes and other urban business structures have contributed to their share of typhus cases. Feed stores and storage buildings are usually the foci in outbreaks of the disease.

In rural areas the barn and the house have played an equal part in being the source of infection. A number of farmers became infected while killing rats in the corn crib when the corn got low.

TABLE V

AGE DISTRIBUTION OF 1946 CASES



The following data show the distribution of the disease by age (Table V) and sex and color (Table VI).

TABLE VI
Sex Distribution of 1946 Cases

Sex	No. Cases	Percentage
Male	62	48.8
Female	65	51.2

Color Distribution of 1946 Cases

Sex	No. Cases	Percentage
White	112	88.1
Black	15	11.9

The data on age distribution indicate what might be expected of this disease, namely, that those individuals in the middle years who are more frequently exposed to rats are more frequently infected.

The data on sex distribution are a little surprising for previous data show men (because of their greater occupational exposure) to be more frequently infected than women. No explanation can be made for the reversal this year except that previous reports on this disease indicated that the sex distribution differences were not marked.

The data on color distribution are in keeping with other reports (Irons and Cox 1946). We do not know why the Negroes are less frequently infected than the white man. It may be that they seek medical attention less frequently than white people. We have not seen any evidence indicating that there is a racial immunity.

The following occupational classification was established on the 1946 cases (Table VII).

TABLE VII
OCCUPATIONAL DISTRIBUTION OF 1946 CASES

Occupation	No. Cases	Percentage
Housewife, rural	13	10.2
Housewife, urban	16	12.6
Student, rural	7	5.5
Student, urban	19	15.0
Farmer	10	7.9
General Store Employee	9	7.1
Misc. Urban Employee	43	33.8
Unemployed	10	7.9
Total	127	

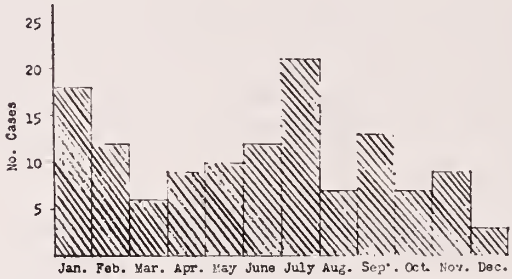
From these data it is again apparent that individuals living and working in urban areas are more frequently infected than individuals living and working in rural areas. It seems significant to us that the general store employee(in this category are included those individuals who work in stores in which grain and feed are sold) did not become infected more frequently than did the farmer. Previous studies showed that stores in which hay, grain, and feed were sold were foci of infection and that employees of such stores came down with typhus more frequently than did other types of employees. The category of "Miscellaneous Urban Employee" is made up of a variety of urban employees who do not come into direct contact with feed stores. It includes such personnel as drug store clerks, nurses, mechanics, factory employees, physicians, elevator operators, etc.

Previous studies on murine typhus have shown that the monthly incidence of the disease was greater during the summer and fall months (Irons and Cox, 1946). Table VIII showing the distribution of the disease in regard to the date of onset shows that there was no marked incidence in any one month.

TABLE VIII

DISTRIBUTION AS TO DATE OF ONSET

1946 Cases



Clinical and Laboratory Findings

In carrying out the epidemiological study of murine typhus in the past year an effort was made to investigate every laboratory report for the agglutination of Proteus OX19 in a titre of 1:160 or higher. The physician who sent in the positive specimen was contacted and asked about the condition of the patient with the positive serum. The majority of the Weil-Felix positives were cases of typhus fever. But sixty-eight patients showing positive reaction in such titres did not have active, frank typhus fever in the opinion of the physician. The positive reactions occurred in individuals on whom the following data were obtained (Table IX).

TABLE IX
PROTEUS TITRES WITHOUT CLINICAL TYPHUS

Data	No. Cases
Fever, unknown origin	11
Antepartum case	8
Postpartum case	8
Urinary tract infection	5
Appendicitis	3
Old case of typhus	3
Typhus vaccination	2
Rheumatic fever	2
Undulant fever	2
Gonorrhea	1
Unknown	30

The relatively large proportion of **Proteus** agglutination positives among pregnant women has been observed before by White (1946) in Texas. This investigator stated "There is a significant difference in the number of blood sera from pregnant women that give a low-titre positive Weil-Felix test and the sera from men and non-pregnant women." White was unable to state definitely why this difference exists.

It is known that **Proteus** infection of various parts of the body will result in the development of agglutinins in the blood of the patient. Such sera will give a positive Weil-Felix reaction in titres of 1:160 and higher. In these cases a physician must interpret these results with his clinical findings on the patients.

Recently a highly specific test for murine typhus was developed by Bengston (1941). This test employs complement fixation reaction. The reaction makes use of an antigen prepared from rickettsiae of murine typhus (**Rickettsia mooseri**) grown in yolk sacs according to the method of Cox. This test not only rules out false positive Weil-Felix reactions but also differentiates between murine typhus and other rickettsial infections like Rocky Mountain Spotted Fever, Q fever, and epidemic, louse-borne typhus. The complement fixation reaction has been shown to react positively in cases in which the illness occurred as far back as nine years

In making the epidemiological studies of all reported cases, the physician was questioned about the laboratory findings on the patients. In some instances the serology was done by private laboratories. In many cases the serology done by the private laboratory could not be corroborated by the State Hygienic Laboratory. For this reason, and others, it was decided to check the reports of both these laboratories by sending sera to either the National Institute of Health or the Virus Laboratory of the United States Public Health Service for complement fixation tests for murine typhus. This would check not only the accuracy of the Weil-Felix reaction reported by the state and private laboratories but also on the accuracy of the physician's diagnosis (Table X).

TABLE X
Comparison of Laboratory Results on Reported Cases of Murine Typhus

State Hygienic Laboratory	
Weil-Felix positive	23
U. S. P. H. S. Laboratory	
Complement Fixation positive	16 or 69.5%
Private Laboratory	
Weil-Felix positive	29
U. S. P. H. S. Laboratory	
Complement Fixation positive	8 or 27.6%

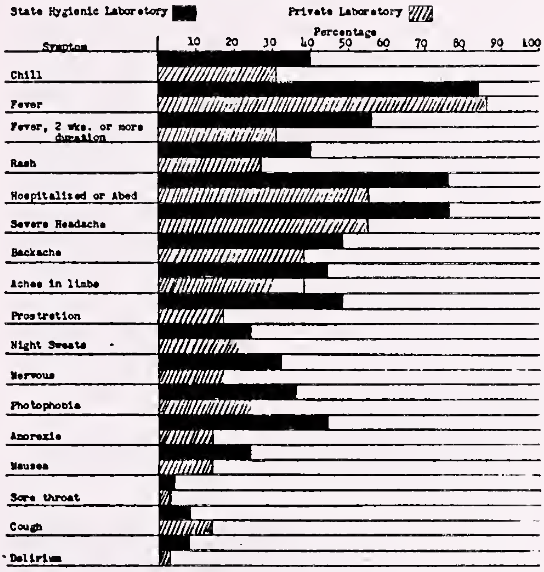
(The two series of cases are entirely separate)

From these data it is apparent that physicians basing their diagnosis in some part on State Hygienic Laboratory results were more accurate in their diagnosis than physicians using the services of a private laboratory. Many private laboratories used the febrile antigens prepared by pharmaceutical houses for the rapid slide agglutination test devised by Welch and Stuart (1936). If the complement fixation reaction is as specific as the National Institute of Health believes it is the higher correlation of positives between the State Hygienic Laboratory results and the United States Public Health Service laboratory results indicates that the test tube agglutination technique as performed by the state laboratory is more accurate than the rapid slide agglutination technique.

In Table XI the positives of the State Hygienic Laboratory and the positives of the private laboratories are correlated with the symptoms of endemic typhus (Rumreich 1933) as given by the physician and the patient. This table shows that a higher percentage of the State Hygienic Laboratory cases exhibited the symptoms of typhus than did the series of cases found positive by the private laboratories. These data again indicate to us that the results of the State Hygienic Laboratory are more accurate in helping the physican arrive at a diagnosis of typhus than the results of the private laboratory.

TABLE XI

CORRELATION OF SYMPTOMS AND LABORATORY POSITIVES



During January and February, 1946, thirteen cases of typhus were reported by two clinics in Washington County. The diagnosis of these cases was based partly on private laboratory findings. The State Hygienic Laboratory was unable to corroborate the findings of the private laboratory. In view of this fact sera was sent to the United States Public Health Service laboratories for complement fixation tests. The results were negative. Further evidence that these cases were not typhus was the fact that only one or two of the patients exhibited a pattern of symptoms consistent with those of typhus. A few of the cases were ambulatory. The clinical pathologist of this laboratory checked the antigen used in performing these tests and admitted that it had lost its specificity.

At this point the question is raised as to whether there are mild, ambulatory cases of murine typhus. We have no evidence in the cases studied this year that such infections do occur. It may be that mild, ambulatory cases will not exhibit a positive serology either in the Weil-Felix reaction or the complement fixation test. Therefore, if such cases do exist they must be proved by other laboratory methods. The typhus cases we saw in this year's series were frank clinical cases with strongly positive sera in which the patient was acutely ill.

It may be mentioned at this point that the United States Public Health Service laboratories did complement fixation tests for Rocky Mountain spotted fever and Q fever as well as murine typhus fever on the sera sent them. One case of Rocky Mountain spotted fever was found in this series of cases. No cases of Q fever were found. This fact is noted here because Q fever has been reported from Texas and Montana in the United States. It is believed that this disease has a greater distribution in the United States than is presently known.

Typhus Survey of Rat Populations

In order to understand better the distribution of murine typhus and to determine the potentialities of typhus transmission in communities, a typhus survey of rats was started in the fall of 1946. The survey was made by trapping rats alive, drawing blood from their hearts for complement fixation tests and combing their fur for ectoparasites. The ectoparasites were identified to determine the number of typhus vectors present. The survey is still in progress but the following data have thus far been obtained. Both urban and rural areas were surveyed. (Table XII).

The United States Public Health Service has recommended that typhus control measures be taken in any community or area which has 10 per cent or more of its rats infected with typhus. On the basis of this data we are advising communities and counties to carry out

TABLE XII
TYPHUS SURVEY OF RAT POPULATIONS

	URBAN—Population Over 500			RURAL—Population Under 500		
County	No. Rat Bloods	No. Rats Positive	Per Cent Positive	No. Rat Bloods	No. Rats Positive	Per Cent Positive
Southeast District:						
Harrison	8	0	0.0	11	0	0.0
Hancock	65	25	38.5	7	0	0.0
Jackson	93	0	0.0	4	0	0.0
Pearl River	18	7	38.8	2	0	0.0
George	27	4	14.8	36	6	16.6
Forrest	133	42	39.1	63	6	9.5
Jones	40	3	7.5	44	3	6.8
Clarke	14	6	42.5	36	0	0.0
Jasper	24	0	0.0	57	1	1.7
Newton	26	5	19.2	38	2	5.2
Southwest District:						
Marion	26	0	0.0	45	6	13.3
Lamar	55	4	7.3	49	0	0.0
Pike	96	25	26.0	15	6	40.0
Amite	22	6	27.3	9	5	55.5
Walthall	14	0	0.0	2	1	50.0
Wilkinson	50	7	14.0	29	5	17.2
Delta District:						
Washington	45	0	0.0	17	0	0.0
Leflore	30	10	33.3			
Sharkey	19	0	0.0	33	0	0.0
Sunflower	34	0	0.0	14	0	0.0
Bolivar	4	0	0.0	10	0	0.0
Northeast District:						
Lee	28	2	7.1	8	0	0.0
Pontotoc	26	0	0.0	28	0	0.0
Union	15	0	0.0	29	0	0.0
Tippah	8	0	0.0	3	0	0.0

rat-poisoning campaigns and other typhus control measures.

In some counties where rat-poisoning campaigns and other typhus control measures have been carried out because of the occurrence of a large number of typhus cases the typhus infection rate in the rat population is low or nonexistent. Such counties are Harrison, Jackson, Forrest, and Jones. We believe that the incidence of murine typhus in human beings can be greatly reduced and eliminated by typhus control campaigns. This fact is borne out by the reduced incidence in the counties mentioned and Pontotoc. This latter county had some thirty cases from 1941-1945. One doubtful case occurred in 1946. The rat survey did not find one rat positive for typhus fever indicating that the infection has died out naturally or has been eliminated by the rat poisoning campaigns.

As would be expected there was a positive correlation between the rat infections and human infections. In Itta Bena (Leflore County) one-third of the rats were found infected in a community where five human cases occurred. During the early months of this year (1947) human cases occurred in Pike and Walthall counties where more than one-fourth of the rats were found infected.

The fact that typhus is still predominantly located in the southern part of the state is borne out by the rat survey. Many more counties to the south of the Jackson-Meridian line showed an incidence of typhus in the rat population. Leflore County (Itta Bena) was the only county thus far surveyed in the Delta which had typhus infected rats. Lee County (Tupelo) had two infected rats. While no cases of typhus have been reported from this county, it may be that human cases will now occur unless measures are taken to check the infection in the rat population.

It was stated previously that many human cases of typhus became infected in purely rural environments. Evidence that some rural areas are potentially dangerous is given in the data collected from the rat survey where a large percentage of rats was found positive by complement fixation tests for the disease.

The ectoparasites collected on these rats were fleas, mites, and lice. The predominating flea was **Xenopsylla cheopis,** the oriental rat flea, which has been shown to be the vector of murine typhus.

SUMMARY

In summarizing the following statements may be made about the cases of murine typhus studied in 1946.

1. The disease is still predominantly one of the southern counties of the state as shown by data on the incidence of the disease in the human population and in the rat population.

2. A few communities in the northern part of the state have had outbreaks of several cases in a single year. On the basis of the rat survey the disease does not appear to have spread beyond these communities. At present, the danger of extension of the disease into previously uninfected areas exists because of the improved channels of communication—namely, the railroads and the highways.

3. Murine typhus is still predominantly a disease of small towns and cities. However, human cases are occurring in rural environments. Rats in rural areas have shown evidence of the disease.

4. Murine typhus seems to be more prevalent in communities served by railroads originating in New Orleans, Louisiana, and Mobile, Alabama, known foci of the disease. Two ports on the Mississippi River have a higher incidence of the disease.

5. The disease in the rat population can be reduced to such a point that it will not constitute a real danger to human beings by typhus control measures employing such procedures as rat-poisoning, DDT dusting, and rat-proofing. Such measures must be carried out on a community-wide basis to be effective.

6. There was a higher correlation of positives in the State Hygienic Laboratory and United States Public Health Service series of sera than in the private laboratories and United States Public Health Service series of sera.

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Extraperitoneal Cesarean Section: Indications and Applications In Practice

EUGENE T. ELLISON, M.D., F.A.C.S., and JOHN G. MARSCH, M.D.

Greenville, Mississippi

EXTRAPERITONEAL CESAREAN section has a definite place in our operative armamentarium in Mississippi.

In spite of our progress along medical lines, there are many obstetrical cases which present themselves at our hospitals, who have had no prenatal care and consult the midwife or doctor only after labor has begun. This is particularly true of a large section of our negro population, but many white people are also guilty of this negligence. Out of this group there arises a smaller but most vital number who have had a test of labor and after no progress ensues are sent to the hospital for delivery. These cases, on arrival at the hospital present an acute emergency which must be worked out immediately, if mother and child are to be saved. Cases of obstructed labor from cephalo-pelvic disproportion when found, are often infected, or potentially infected from prolonged labor with membranes ruptured and the baby living. Here are perfect indications for the extraperitoneal cesarean section.

Although this procedure has been considered tedious, more and more reports[1-6] are appearing in the literature of large numbers of such operations being performed. Waters reports 23 per cent of his cesarean sections are being carried out by the extra-peritoneal route, and insists that this procedure be carried out on all cases where there is suspected contamination, rather than on the grossly infected and neglected parturient. The involved technical procedure has discouraged the widespread adoption of this operation. It is our contention that recent advances in the technique, particularly those described by Waters, make the use of this technique, particularly those described by Waters, makes the use of this tecnique easier and therefore an essential operation.

The operation involves the making of an opening down the top and sides of the bladder to the uterus without opening the peritoneal cavity to uterine spillage, and must be carried out without injuring the bladder, ureters or major nerves and blood vessels. The most common error consists of small tears into the peritoneum. Their closure before the uterus is opened does not detract from the value of the operation. Essentially, the technique we follow consists first of preparation with adequate blood transfusions and fluids; and the use of an indwelling catheter attached to an irrigator to allow free inflow and outflow of fluid into the bladder. The vagina and abdominal region are then surgically prepared. A left lower rectus incision is made down to the transversalis fascia, retracting one or both recti muscles laterally. A T-shaped incision is made in the transversalis fascia and the perifascia across the fundus of the partially filled bladder. This exposes the musculature of the bladder and the vessels which cover the surface. The dissection beneath the perivesical fascia is the most important factor in the success of the operation as the peritoneum is adherent to the fascia over the dome of the bladder, and any attempt to separate the peritoneum alone at this point makes the operation a failure. Once a tunnel over the left pole of the bladder down to the uterine fascia is made the dissection becomes easier. As the uterus is reached, a transverse incision through the blended utero-vesical fascia is necessary, and must be made below the fold of peritoneum which presents here. With the finger beneath the fascia, dissection is made along the sides and under the bladder, thus ending the incision. The uterine peritoneal covering is then pushed up and the operation proceeds like any transperitoneal lower segment operation. Once the uterine contents are delivered and the uterus resutured, the wound is closed with a small drain in the lower angle of the wound. The peritoneo-vesical flap is replaced over the dome of the bladder and the incision in the transversalis fascia is closed.

During the last year we have carried out ten such sections with gratifying results. All of the cases were previously contaminated as a result of long labors, frequent examinations and attempts at delivery. Four were toxic and two were further complicated by degeneration vascular disease. All the mothers survived and retained their child-bearing organs. Nine babies survived. Our experience, though brief, seems sufficient to recommend this procedure where such indications exist and surgical facilities are adequate. A motion picture has been prepared to clarify the technique. The success of the procedure depends entirely upon correct dissection between the bladder musculature and the perivesical fascia. Preëxisting labor which dilates the lower uterine segment enlarges the potential field of operation making neglected cases particularly suited for this technique.

In conclusion, I want to emphasize that this is not too hazardous a procedure where indications are present and the lives of both mother and child are at stake.

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THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of federal government under which shall be coördinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy

2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

A new drug, 'Staticin' Caronamide, which inhibits the renal tubular (kidney) excretion of penicillin and elevates the concentration of penicillin in the plasma from two-to-sevenfold, is reported in the current (August) issue of *The American Journal of Medicine.*

According to the report, combination staticin-penicillin therapy promises successfully to combat such highly resistant infections as subacute bacterial endocarditis and osteomyelitis —diseases against which penicillin alone has been relatively ineffective.

During the study, staticin was given orally in doses of 2.0 gm. every four hours in fourteen cases. No evidence of systemic toxicity was noted in these patients to whom the new compound was given.

The Mississippi Doctor

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

The Mississippi State Hospital Association held its annual session at the Robert E. Lee Hotel October 16-18 and presented a most instructive and helpful program. Dr. Henry Boswell presided ably as president, Miss Grace Golden as secretary, while Dr. A. Street was chairman of the program committee.

§

The American Association of Medical Record Librarians, Extension Course Division, will give courses at the Edwards Hotel Nov. 13-14. Many nurses should be interested in the course. Write Miss Maude Marie Holmes, R.R.L., Baptist Hospital, Jackson, Miss.

§

Blue Cross Plan Insurance is now ready for action in our state. It has been accepted by about thirty million people in all the states in the union with maybe one or two exceptions. This insurance provides hospital coverage and some fees for sickness, surgical cases principally. It is operated on a non-profit plan. We think the people are ready for this type of insurance and feel that doctors and hospitals both will want to coöperate in every way to make it a success.

§

Dr. W. H. Parsons of Vicksburg is now president of the Mississippi State Hospital Association. In this capacity he will do his full duty to the hospital association and in turn to the people of the state. He is both able and active.

§

It is now time to make your plans to attend the Mid-South in Memphis in February. The doctors of the tri-states love this association.

§

One hundred years ago the average span of life in this country was forty years, now it is sixty-seven. Surely the science of medicine is marching on victoriously. But even so we fear that the heart and soul, the spirit of medicine is not keeping step with science of medicine.

FROM DOCTOR BRYAN

I began the practice of medicine in April, 1888, almost sixty years ago. Medical ethics was included in the curriculum of the school from which I graduated. The duty of teaching this branch was assigned to a very able teacher, who was also a splendid doctor. He had a rich experience gained from many years of active practice. However, I did not hear from him a single lecture devoted entirely to ethics. But he wove into his course many stories, drawn from his experience, illustrating the principles of medical ethics. I heard him say frequently that the substance of the whole matter could be covered in a few sentences chiefly that every man offering to practice medicine should be and is supposed to be a **gentleman** in all the word implies; and that he should deal with the public, the patient and the doctor just as any gentleman would. In that case medical ethics would never be violated and only a misunderstanding could lead to the belief that any doctor had acted in an unethical way.

Speaking from sixty years of personal experience, I will say that I have found that doctors, as a whole, are the highest class of **gentlemen** that the world affords, but unfortunately the circumstances and conditions surrounding doctors make it inevitable that misunderstandings frequently prevail. At times false statements are made by friends and other members of the public that lead doctors to believe that other doctors are guilty of non-ethical conduct. But I fear that our standards are being fearfully lowered—that the teaching and practice of medicine have become so commercialized that only a miracle or great effort can save the situation. Our boys should be taught that no man worthy a place in our ranks should be allowed to believe that medicine is a business whereby money can be made, that no self-respecting man will do or say anything that will weaken or lower the respect and confidence that any patient has for his own physician, that no honest man will take (under any circumstances) a patient that rightfully belongs under another doctor's care. If a patient (or his friends) decide that a change should and must be made, the doctor in charge must be told that his services are no longer wanted. I repeat, no honest doctor will discuss a case that is under another doctor's care until the first doctor has been relieved of any responsibility for the case. In the event consultation is desired, the doctor in charge should be notified and he should extend the invitation to the doctor who may be wanted to join in the study of the case with the doctor already in charge. Unless the doctor in charge asks the consultant to discuss the case with patients or friends, he should never do so. If asked to do so he should say "It is not my privilege to do so. I have discussed the case with the doctor in charge, he will do the talking." If, as frequently happens, a patient is sent to another town and doctor, the same rule of ethics should prevail. And a complete report of findings and opinion should be made as soon as possible by the consultant to the home doctor. A failure to do this is a gross neglect of ethics and should be considered as dishonest usurpation of the home doctor's rights. The patient should not be instructed to return for further treatment or advice. The home doctor, however, may be asked to **send** the patient back or to report by mail or otherwise the progress of the case and the result of treatment. In the case where both doctors live in the same town, the patient should **not** be asked or allowed to return for further care or treatment unless the first doctor to see the case should accompany the patient or advise him to see the consultant again. In such case the consultant or specialist is honor bound to keep the first doctor informed of every new development or discovery as well as of any advice given the patient and reason for giving it.

G. S. B.

News and Comment

NOT NEW TO US

That all men intending to specialize be required to spend five years in general practice first is the recommendation made at a recent American Medical Association convention. This recommendation is mentioned in an editorial, "Better Days for G.P.'s," in the July issue of **Medical Economics.** The writer goes on to predict that if the present trend continues "G.P.'s may well become the dominant element in the profession."

Pointing out that, when general business slacks off and the bed shortage lessens, it may be necessary not only to invite general practitioners but to **urge** them to make full use of hospital facilities, the writer reveals that "specialists themselves are talking for the G.P." Several specialty boards and societies have stated that hospital staffs must not be limited to board-certified specialists, but must include both the non-certified specialist and the general practitioner.

In June, 1947, at the annual convention of the American Medical Association, approximately 150 general practitioners met to organize the American Academy of General Practice. Twenty-seven states were represented and enthusiasm ran high, with a vigorous program getting under way in the interests of the general practitioner throughout the country. General practitioners, like surgeons, have problems that are best solved through an organization of their own.

Medical students are to receive special attention. It is planned to get more teachers experienced in general practice to show students the advantages of such practice and to give students better training of the kind needed by a prospective general practitioner.

One suggestion voiced at the AMA convention was that two-thirds of the AMA trustees and council members be men in active, private practice and that half of these be general practitioners.

PHYSICIAN'S LONGEVITY

Mississippi physicians frequently live beyond the biblical age of three-score and ten according to Dr. Felix J. Underwood, state health officer. Since January of this year, Mississippi has lost twenty-eight physicians, it was stated. The average of the physicians at time of death was seventy years and fifteen were more than seventy years of age at the time of death. One physician was ninety years of age at the time of death and one was forty-nine. The average life span is now about sixty-five years.

Of this number of physicians who died in the state, eleven were graduates of the University of Tennessee (Memphis Hospital Medical College), five of the Louisville Medical College, four of Tulane University, four of Vanderbilt and one each from University of Nashville, Mississippi Medical College, Loyola Medical School, aand Chicago College of Medicine.

Twenty-three of the twenty-eight physicians who died this year were born in Mississippi, three were born in Alabama, one in Arkansas, and one in Louisiana.

Attention was called to the fact that these twenty-eight physicians had rendered more than 1,000 years of medical service to the citizens of Misissippi, since practically all of them had practiced medicine in the state since their graduation from medical school. Seven of this number, according to the best information available, had practiced medicine in the state for more than fifty years.

UROLOGY AWARD

The American Urological Association offers an annual award of $1000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

For full particulars write the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee. Essays must be in his hands before March 1, 1948.

COMMITTEES ON ARRANGEMENTS, BALTIMORE

General Chairman—Dr. Harry C. Hull.

Vice-General Chairman—Dr. Theodore E. Woodward.

Secretary—Dr. Lewis P. Gundry.

Executive Committee—Dr. Harry C. Hull, General Chairman; Dr. C. Reid Edwards, President, Baltimore City Medical Society; and Dr. F. A. Holden, Councilor from Maryland, Southern Medical Association.

Finance—Dr. Albert E. Goldstein, Chairman; Dr. Weatherbee Fort, and Dr. Lawrence R. Wharton.

Clinical Sessions, Baltimore Day—Dr. George H. Yeager, Chairman; Dr. George G. Finney, Dr. Benj. M. Baker, Jr., Dr. Louis A. M. Krause, Dr. Alan C. Woods, and Dr. Thomas R. O'Rourke.

Entertainment—Dr. Benjamin Tappan, Chairman; Dr. William F. Rienhoff, Jr., Dr. D. C. Wharton Smith, and Dr. W. H. Toulson.

Hotels—Dr. Howard M. Bubert, Chairman; Dr. Allen F. Voshell, and Dr. Leo Brady.

Publicity—Dr. Charles W. Maxon, Chairman; Dr. Edwin L. Crosby, Dr. H. Boyd Wylie, Dr. Richard T. Shackelford, and Dr. Erwin E. Mayer.

Scientific Exhibits—Dr. Grant E. Ward, Chairman; Dr. Beverly C. Compton, Dr. Howard W. Jones, Jr., and Dr. Douglas H. Stone.

Membership—Dr. Otto Chas. Brantigan, Chairman; Dr. David Tenner, and Dr. Hugh J. Welch.

Golf—Dr. George McLean, Chairman; Dr. Edwin N. Broyles, and Dr. Harry L. Rogers.

Radio—Dr. M. Alexander Novey, Chairman; Dr. Huntington Williams, and Dr. Louis H. Douglass.

Women Physicians—Dr. Rachel K. Gundry, Chairman; Dr. Lucille Jane Caldwell, Dr. Grace Hiller, and Dr. Bessie L. Moses.

Ladies' Entertainment—Mrs. Henry F. Ullrich, Chairman, and Mrs. Edward F. Cotter, Co-Chairman.

CANCER SEMINAR

An educational seminar covering the entire field of malignant diseases will be held November 12, 13 and 14, 1947, in the auditorium of the Roosevelt Hotel, Jacksonville, Florida. This seminar is under the auspices of the American Cancer Society, Florida Division, and is being staged by the Tumor Clinic of the Duval County Hospital, Jacksonville, Florida.

The prime purpose of this meeting is to make available to the physicians of the southeast the latest knowledge in the diagnosis and management of malignant diseases. The American Cancer Society has devoted considerable effort to lay education, and it is hoped that this seminar will provide the counterpart within the medical profession by bringing the most recent information to the physicians so that they may keep abreast of developments in the various fields of malignant diseases. This is the first meeting of this nature to be held in this part of the country, and an open invitation is extended to all physicians who find it possible to attend.

The tentative roster of speakers and their subjects are as follows:

1. Tumors of the Female Genital Tract—Dr. Emil Novak, Johns Hopkins Hospital, Baltimore, Maryland.
2. Tumors of the Gastrointestinal Tract—Dr. Samuel Marshall, The Lahey Clinic, Boston, Massachusetts.
3. Tumors of the Breast—Dr. Frank Adair, Memorial Hospital, New York City.
4. Tumors of the Genito-urinary Tract—Dr. Archie Dean, Memorial Hospital, New York City.
5. Lymphomas and Related Tumors—Dr. Lloyd Craver, Memorial Hospital, New York City.
6. Mixed Tumors—Dr. George Pack, Memorial Hospital, New York City.
7. Tumors of the Head and Neck—Dr. James E. Scarborough, Winship Clinic, Emory University Hospital, Atlanta, Georgia.
8. Tumors of the Chest—Dr. Oscar T. Clagett, Mayo Clinic, Rochester, Minnesota.
9. Carcinoma Research—Dr. George Shimkin, National Cancer Institute, Bethesda, Maryland.
10. Tumor Pathology—Dr. Fred Stewart, Memorial Hospital, New York City.

Since the entire field of malignant diseases will be covered during these three days, it is felt that at least some part of the program will be of interest to every practicing physician. It is hoped and urged that every physician in the vicinity will take advantage of this opportunity.

A final schedule of subjects and speakers will be published in the next issue of this journal. Details of the meeting may be obtained by writing the Tumor Clinic of the Duval County Hospital, 2000 Jefferson Street, Jacksonville 6, Florida.

NOTICE

The American Academy of Allergy will hold its annual convention at Hotel Jefferson, St. Louis, Missouri, December 15-17, inclusive. All physicians interested in allergic problems are cordially invited to attend the sessions as guests of the Academy by registering without payment of fee. Round table conferences will be held on Monday afternoon, December 15, 1947. Advance copies of the program may be obtained by writing to the Chairman on Arrangements, Charles H. Eyermann, M.D., 634 North Grand Boulevard, St. Louis, Missouri.

Deaths

DR. G. W. McGOWEN

Dr. G. W. McGowen, 71, Bolton physician, died September 15 after an extended illness.

He had been a practicing physician for the past forty years. For the past twenty-two years he had been practicing his profession in Bolton. He was the senior deacon in the Bolton Baptist Church.

Besides his wife, Mrs. Nina McGowen, he is survived by one son, Woodrow McGowen, Bolton; one daughter, Miss Mazel McGowen, Bolton; one brother, Nathan McGowan, Clinton; two sisters, Miss Mollie McGowen, Cilnton; Mrs. Sam Yeatman, Maben.

Funeral services were held Wednesday at 10 a.m. at the Bolton Baptist Church. Interment followed in the Double Springs cemetery, four miles east of Maben.

Dr. McGowen received his medical education at Chattanooga Medical College, Chattanooga, Tennessee, graduating in 1909.

DR. E. M. MURPHY, SR.

Dr. Eugene Moreau Murphy, Sr., for more than forty years one of the city's leading practicing physicians, died at his home in Macon Monday afternoon following a long illness. He was 78.

Services were held at the residence, the Rev. T. E. Gregory officiating. Burial was in Odd Fellows Cemetery.

Dr. Murphy was born and reared in Macon and received his early education in the local public and private schools. He received his bachelor's degree from the University of Alabama and his medical degree from the School of Medicine at Louisville, Ky.

Later he did postgraduate work at Tulane University and then went to the University of Chicago to study eye, ear, nose and throat work.

After finishing his medical education, he practiced two years in Chattanooga and returned to Macon where he had practiced since.

In 1893 he married the former Annie Hardin of Macon.

In addition to his wife, he leaves two sons, C. H. Murphy of Itta Bena, and E. M. Murphy, Jr., of Gulfport; a daughter, Mrs. W. R. Rainey of Macon; seven grandchildren and five great-grandchildren.

DR. C. E. BYLER

Known throughout Lepanto, Arkansas, and that section of Poinsett County, where he practiced since 1913, Dr. C. E. Byler was the first physician to volunteer his services during World War I, and served in France in charge of a debarkation hospital, with the rank of lieutenant.

Returning to Lepanto to practice medicine after the war, he had helped in every worthwhile civic project in Lepanto since. He served as an elder in the Church of Christ, the brick building which he helped to erect. He was a Mason, former member of the Drainage District No. 7 Board, executive member of the American Legion Board and post surgeon since its organization, and president of the Lepanto School Board for many years.

Dr. Byler was born in Ripley, Tennessee, and moved with his family to Lake City at the age of 3. He attended the University of Arkansas where he did his premedical work and was graduated from the University of Tennessee College of Medicine in 1912. He married Miss Ada Johnston of Lepanto in 1917.

Besides his wife, he leaves a daughter, Mrs. Bonnie Beth Byler Burke, 1943 Maid of Cotton, of Helena, Arkansas; a brother, W. O. Byler of West Memphis, in charge of the Levee Board there, and two sisters, Mrs. Lillian Clements of Independence, Mo., and Mrs. Clara Dale, England, Arkansas.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PATHOLOGY

CYTOLOGIC RECOGNITION OF CANCER IN EXFOLIATED MATERIAL FROM VARIOUS SOURCES, USEFUL MODIFICATIONS OF THE PAPANICOLAOU TECHNIQUE. *Surgery, Gynecology and Obstetrics,* 1947, 85: 275-280.

Papanicolaou first applied the technique of study of desquamated vaginal epithelium to the diagnosis of uterine cancer in 1923. Others who have published results of similar investigations are Meigs and Ayre.

It now appears that the smear technique is applicable to cancer involving or communicating with all body orifices including bronchogenic, gastric, bladder, and renal cancer.

The authors, dissatisfied with certain aspects of the Papanicolaou technique such as the inability to obtain good, even smears, the time required to examine an area one inch by two to two and one-half inches, containing relatively few cells, have devised a method of concentrating the cells, embedding the tissue in paraffin, and then cutting sections.

The gratifying features of this technique are as follows: Cells are well preserved, they are concentrated, obviating the necessity for a long search over a wide area; Papanicolaou's stain can be employed if desired; all cells are in the same focal plane; and groups of cells are not torn apart, thus enabling cell patterns to be examined.

The authors' method of obtaining and preparation of vaginal fluids for examination is described.

Thus far only bronchial secretions obtained at the time of bronchoscopy and not expectorated sputum, have been studied by the authors. Their method is to pour the content of the trap of the bronchoscope into alcohol-ether or formalin followed by embedding, sectioning, and staining with Papanicolaou stain.

Practically always when the biopsy of the bronchial lesion is positive for carcinoma, the embedded mucus will also contain tumor cells and thus serve as a check. In addition, the method's usefulness in cases in which no biopsy can be obtained is illustrated in such a case, having a suggestive shadow in the roentgenogram, and enough cells in the aspirated mucus from the affected side to establish a preoperative diagnosis of bronchogenic carcinoma, proved by pneumonectomy.

A similar technique is used for material aspirated from the empty stomach by stomach tube or at the time of gastroscopy. In the latter case the material preferably should be obtained from the visible lesion or its vicinity. Because of gastric ferments the gastric mucus must be fixed promptly.

The authors have studied only known instances of carcinoma of the bladder by the same technique on freshly passed urine, but have found it of diagnostic value.

Although the authors' experience is limited insofar as the study of rectal mucus in cases of carcinoma of the lower colon is concerned, they believe the paraffin embedding technique of specimens of mucus obtained from the examining finger, the anoscope, or the proctoscope is of diagnostic value.

With regard to transudates and exudates it is pointed out that precipitation of protein with picric acid, filtration, embedding, and sectioning saves much time and effort. A case of actinomycosis in which the organism was easily demonstrated by this method is given as example of the efficacy of the procedure in the examination of this type of material.

The Papanicolaou stain is considered by the authors to be far superior to other tissue stains, because of the sharpness with which nuclei stand out under low power, the fine nuclear detail brought out by higher magnification and the relative freedom from technical difficulties.

State Board of Health

Felix J. Underwood, M. D.

THE SCHOOL HEALTH SERVICE

by

N. C. KNIGHT, M.D.
Medical Director

The School Health Service, begun in July, 1942, is administered jointly by the State Department of Education and the State Board of Health. Both state departments share equally in its administration and responsibilitics. The directorship is dual, being composed of a well-trained and experienced educator and a medical public health administrator. The directors are appointed jointly by the state superintendent of education and the state health officer.

The School Health Service combines health and education services, both in the state and local level, so that medicine and education can work most effectively to improve the health of children. The inauguration of this program followed many years of coöperative effort on the part of the State Board of Health and the State Department of Education. Among its objectives are: 1) scientific health education of children; 2) medical and surgical correction of physical defects with the aid of the local medical profession; 3) improvement of the sanitary environment of schoolhouses, with particular attention to water supply, sewage disposal, heating, lighting, ventilation, and other factors; 4) a good nutrition service and better school lunchroom facilities; and 5) to prepare teachers better for the teaching of health and hygienic living.

Simply stated, the purpose of the program is to provide health educational opportunities for Mississippi's school children and to assure them a chance for fullest development by providing a well-rounded program to improve their health. The following activities are considered basic:

1. Pre-service and in-service teacher training in school health, conducted in the colleges.
2. Operation of health education workshops to prepare teachers for guidance and teaching of children in health essentials.
3. Provision of consultant and advisory services on school health matters to local health departments, schools and colleges throughout the state.
4. Medical correction program. Physical examination and correction of physical defects found in children, ages 2-18. (In this age group, there are approximately 600,000 children—300,000 white and 300,000 Negro.)
5. Nutrition services to schools, health departments and adult groups, with emphasis on nutrition education and good nutrition practices at school and in the home.
6. Physical education services to local schools and colleges, to assist in proper care of the body, needed exercises and rest.

Medical Correction Program

For many years county health officers and their staffs have given attention to the examination of school children and have made every effort to get medical corrections of physical defects disclosed. A great many parents could and did pay for the corrections for their own children. However only two or three counties were able to secure sufficient funds to carry on a very adequate service for the thousands financially unable to have such corrections made. In 1944 the state legislature made a small appropriation for this purpose and with this assistance the program has taken on additional significance and meaning in the results finally achieved.

Public health workers, classroom teachers, and private physicians find the children with physical defects and refer them to the local health officer. He in turn makes arrangements for needed medical or surgical treatment (and hospitalization) to correct the defect. Physicians and hospitals render their services for these children at a reduced rate, the charges ranging from 25 to 75 per cent of their usual fees. One-half of the total cost of each correction is borne by local sources—boards of supervisors, civic clubs, welfare departments and other local organizations or individuals. The other half of the expense is paid by the School Health Service.

All of these services are done for children (two to eighteen years of age) of families, both white and Negro, who are not able to pay. Each case is investigated by the local welfare department and a report is made to the local health officer before a commitment is made to the family. In this way the funds and services go to the most needy children. At the same time the medical correction program is actively promoted among those able to pay.

In the two-year period ending June 30, 1947, attention was given to the following among school children of the state with the use of the funds provided by the legislature:

	Number
Malnutrition	831
Posture	63
Skin and scalp	1203
Glands	100
Eyes	153
Ears	123
Nose	48
Throat	1762
Lungs	57
Heart	30
Hearing	22
Vision	850
Hookworm	244
Total corrected or treated	5914

The development of a good school health program which will safeguard the health of today's youth and which will make it possible to detect disease in its earliest stages and to correct physical defects is one of the soundest contributions which may be made to preventive medicine and public health. It stands as a challenge to physicians and health workers in the making of tomorrow's citizens.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Aug. 1947	*Aug. 1946*	*Aug.-5 Yr. Av.*
Poliomyelitis	10	93	31.6
Bacillary Dysentery	11	706	1906.0
Dengue	0	1	.2
Diphtheria	37	42	42.8
Influenza	3	2011	1201.4
Measles	8	186	152.6
Meningococcus Meningitis	2	4	5.6
Other Forms Meningitis	6	5	4.0
Pellagra	2	195	189.0
Pneumonia	26	814	481.4
Pulmonary Tuberculosis	249	183	164.4
Scarlet Fever	12	22	25.0
Smallpox	0	0	0.0
Tularemia	3	5	3.8
Typhoid Fever	11	15	20.0
Typhus Fever	8	17	23.6
Undulant Fever	8	16	10.2
Whooping Cough	38	638	640.6

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EXECUTIVE BOARD LUNCHEON

At a beautifully planned September luncheon at the Robert E. Lee Hotel in Jackson, Mrs. S. B. McIlwain, state president, entertained the members of the executive board for a discussion of plans for the year. Gorgeous gladioli formed a centerpiece for the table.

Mrs. O. C. Raines of Gulfport served as secretary for the meeting. Mrs. McIlwain brought a report of goals set by the national organization, urging a closer affiliation with the national aims and endeavors. She particularly pointed out the profit to be gained from subscribing to the *Bulletin, Hygeia,* and other helps sent out by the national office.

The following members of the board were present, each bringing a report of work to be undertaken for the year, followed with a general discussion by all present: Mrs. J. K. Avent, Grenada, president-elect; Mrs. Stanley A. Hill, Corinth, first vice-president; Mrs. A. B. Harvey, Tylertown, second vice-president; Mrs. J. P. Wall, Jackson, fourth vice-president; Mrs Harvey Garrison, Sr., Jackson, History and Archives; Mrs. W. C. Pool, Cary, parliamentarian; Mrs. John B. Howell, Canton, Research and Romance of Medicine; Mrs. A. J. McIlwain, Jackson, Doctor's Day; Mrs. O. C. Raines, Gulfport, Post-War Planning; Mrs. B. Lampton Crawford, Tylertown, councilor; Mrs. L. J. Clark, Vicksburg, ~~past~~-president.

NORTHEAST MISSISSIPPI AUXILIARY

Mrs. Thomas Gore, president of the Northeast Mississippi Medical Auxiliary, presided at the quarterly meeting in the Mary Buie Museum at Oxford, Miss., October ninth at two o'clock.

Mrs. W. H. Lunceford reported that a child had been approved and will be entered at the Sanatorium when a vacancy occurs.

Newly elected officers for 1948 are: President, Mrs. A. E. Brown, Columbus; President-Elect, Mrs. W. H. Lunceford, Sardis; Secretary-Treasurer, Mrs. J. R. Simms, Oxford; First Vice-President, Mrs. Thomas Gore, Houston; Second Vice-President, Mrs. J. H. White, Columbus; Third Vice-President, Mrs. Stanley A. Hill, Corinth; Fourth Vice-President, Mrs. L. M. Jurney, Aberdeen.

It was a happy occasion to have as guests the president of the Woman's Auxiliary to the Mississippi State Medical Association, Mrs. S. B. McIlwain of Pascagoula, and the president-elect, Mrs. J. K. Avent of Grenada. Mrs. McIlwain brought an enlightening message on the year's plan of work. She urged our being well informed by reading *The Mississippi Doctor* and other medical periodicals.

Her slogan for the year is "Everyone Win One" that we may double our membership to 1,002. *Hygeia,* the *Bulletin,* public relations and medical legislation were stressed and she stated Mrs. Eustace Allen, national president, recommended for one's library, *Medicine in a Changing World.*

Mrs. McIlwain further urged that local groups keep in touch with the national organization and each auxiliary alter its pattern according to local needs. She closed with the reading of "The Doctor's Wife."

Mrs. Avent, organization chairman, encouraged the year's slogan and urged the increase in membership. New auxiliaries have been organized and tentative plans are being made to organize other units. Both officers plan to attend the National Woman's Conference which convenes in Chicago in November.

The Oxford hostesses climaxed their hospitality with tea. Mrs. John Culley presided at the tea table, assisted by Mrs. V. B. Harrison, Mrs. J. R. Simms, and Mrs. M. E. Morrison.

The attractive table was draped with a lace cloth, centered with colorful dahlias. The guests also enjoyed viewing the oils and water colors of Wade Herbert Armstrong of Tupelo. Many of the water colors were war scenes. Mr. Armstrong spent some time in South America where he was known as Tencinte Bracoforte. His portraits are outstanding.

CENTRAL MEDICAL AUXILIARY

The Woman's Auxiliary to the Central Medical Society held its first meeting of the season at the home of Mrs. Lawrence Long at 1709 Peachtree Street, Tuesday afternoon, the president, Mrs. T. E. Wilson, presiding.

The society had as its guests, Mrs. S. B. McIlwain from Pascagoula, president of the State Auxiliary to the Mississippi Medical Association and Mrs. J. K. Avent from Grenada. Both visitors gave short talks on the plans of the auxiliary for the coming year.

Mrs. Lawrence Long and the officers for the coming year were hostesses. They are as follows: Mrs. T. E. Wilson, Mrs. Harvey Garrison, Jr., Mrs. John B. Howell, Jr., Mrs. J. P. Wall, Mrs. T. W. Kemmerer, Mrs. Charles Ward, Mrs. Robin Harris, Mrs. Gordon Dees, Mrs. Thomas Blake, Mrs. James G. Thompson, Mrs. Fred Hollowell, Mrs. James Walton Lipscomb, Mrs. W. F. Hand, Mrs. W. A. Smithson, and Mrs. Frank Berry.

Fall colors were used to decorate the house and the table was overlaid with a lovely white Madiera cloth. A centerpiece in a silver bowl of autumn flowers was flanked by four silver candelabra. Mrs. McIlwain and Mrs. Avent poured tea and the cohostesses served delicious refreshments.

The following guests and members were

present: Mrs. Ford Williams, Mrs. William B. Wiener, Mrs. C. C. Callendar, Mrs. R. H. McArthur, Mrs. W. E. Lotterhos, Mrs. C. R. Bowman, Mrs. Don M. Griswold, Mrs. E. D. Parker, Mrs. S. B. McIlwain, Mrs. J. K. Avent, Mrs. T. E. Wilson, Mrs. W. F. Hand, Mrs. J. W. Lipscomb, Mrs. W. J. Witt, Mrs. Norris C. Knight, Mrs. Lee R. Reid, Mrs. Forrest G. Bratley, Mrs. Joe C. Rude, Mrs. R. W. Crowell, Mrs. Lee M. Lipscomb, Mrs. Raymond F. Grenfell, Mrs. J. Gordon Dees, Mrs. T. W. Kemmerer, Mrs. Hardie Hays, Mrs. Temple Ainsworth, Mrs. H. R. Shands, Mrs. George E. Twente, Mrs. William M. Dabney, Mrs. F. M. B. Slater, Mrs. W. Lauch Hughes, Mrs. Charles Ward, Mrs. W. C. Thompson, Mrs. Robin Harris, Mrs. James Grant Thompson, Mrs. W. A. Smithson, Mrs. Lawrence Long, Mrs. F. D. Hollowell, Mrs. Thomas H. Blake, Mrs. J. P. Wall, Mrs. George Adkins, Mrs. Maxwell D. Berman, Mrs. Stirling S. McNair, Mrs. A. A. Schmid, Mrs. P. R. Greaves, Mrs. A. E. Gordin, Mrs. W. R. Bethea, Mrs. Harvey F. Garrison, Jr., Mrs. Edwin B. Werkheiser, Mrs. Byron Alexander, Mrs. Byron Alexander, Mrs. Thomas Robertson, Mrs. A. J. McIlwain, Mrs. L. T. Carl, Mrs. J. Harvey Johnston, Jr., Mrs. George Riley, Mrs. Thomas M. Dunn, Mrs. L. W. Willey, Mrs. O. P. Myers, Mrs. T. A. Baines, Mrs. J. A. Chustz, Mrs. T. B. Holloman, Mrs. H. C. Ricks, Mrs. J. T. Weeks, Mrs. Felix J. Underwood, Mrs. Willard L. Waldron, Mrs. C. H. Denser, Mrs. George W. Owens, Mrs. James W. Caden, and Mrs. Frank Berry.

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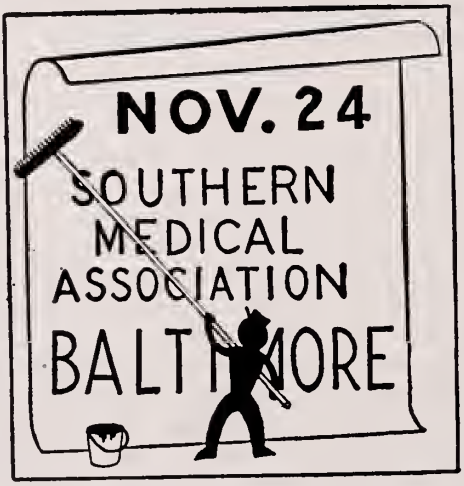

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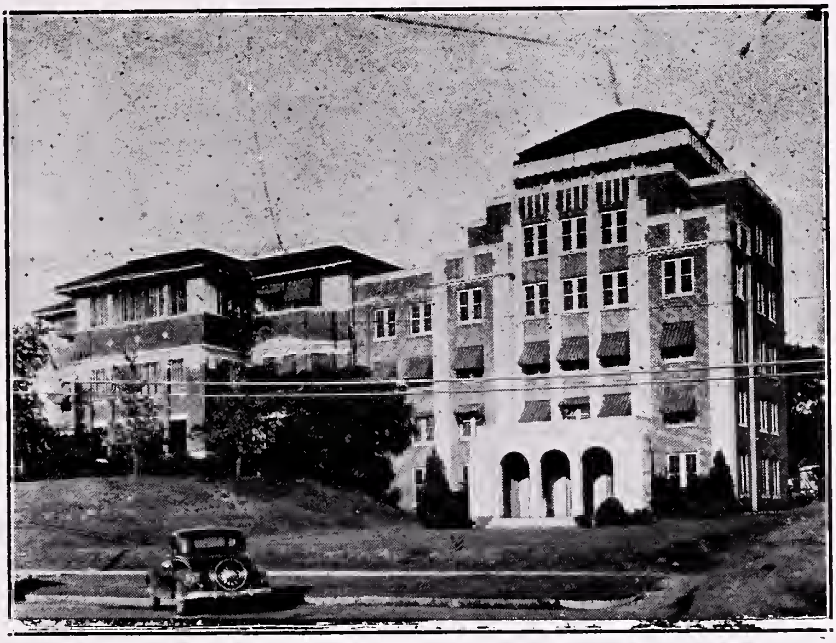

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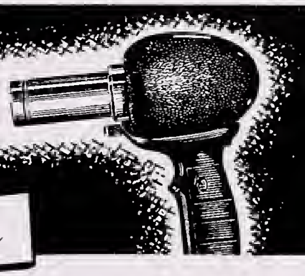

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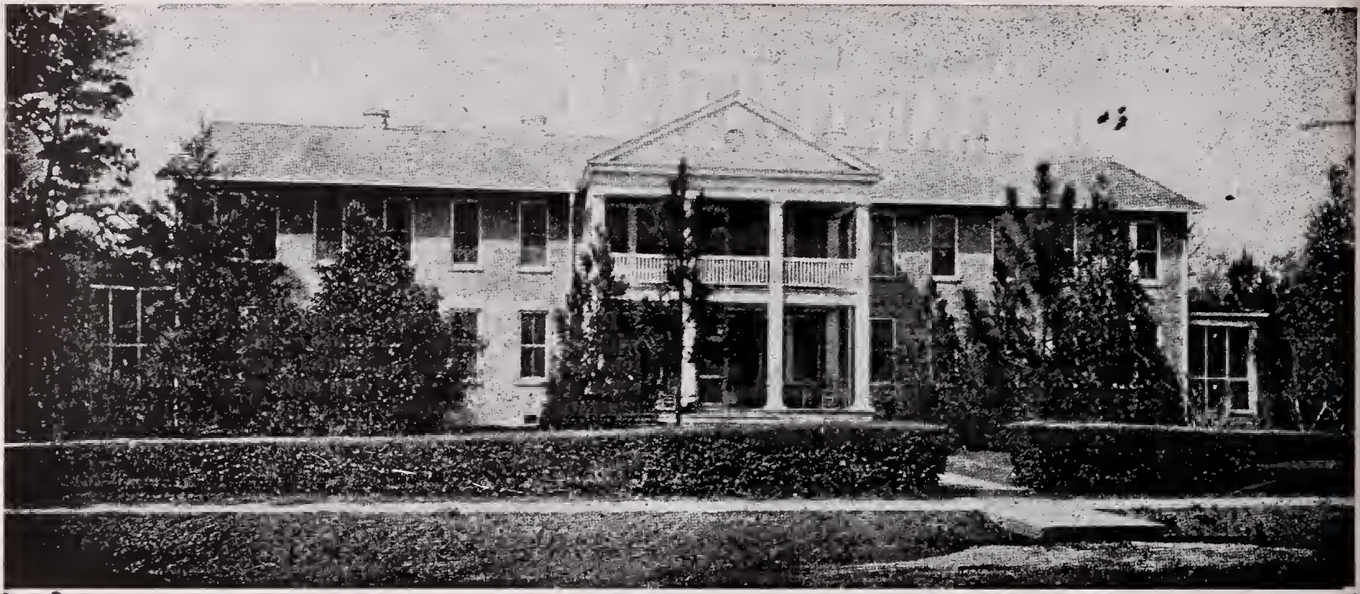

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The Mississippi Doctor

VOL. 25 BOONEVILLE, MISSISSIPPI, NOVEMBER, 1947 NO. 6

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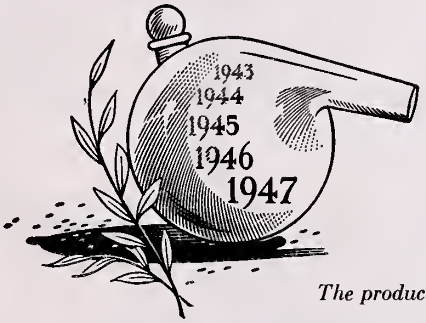

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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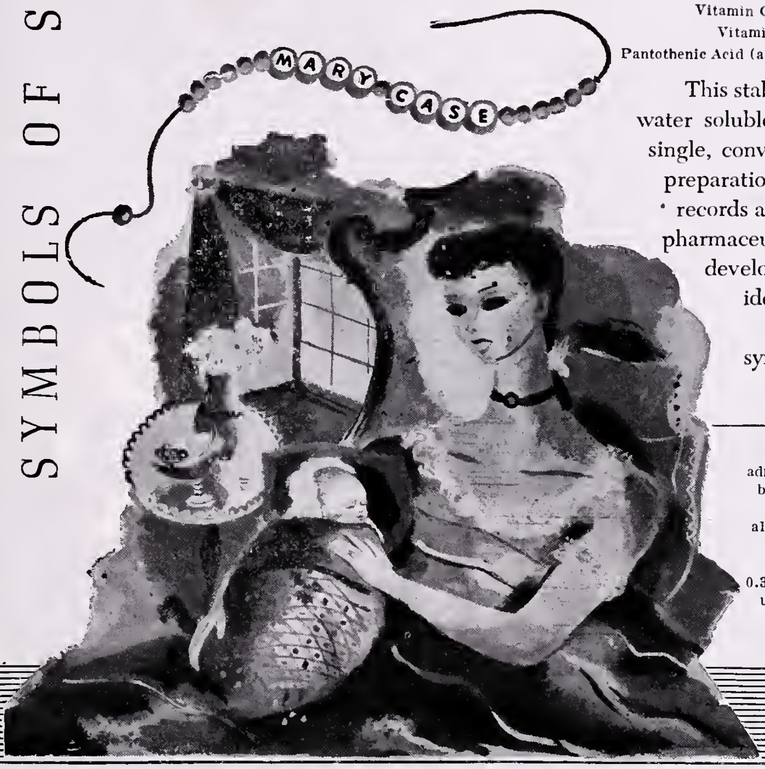

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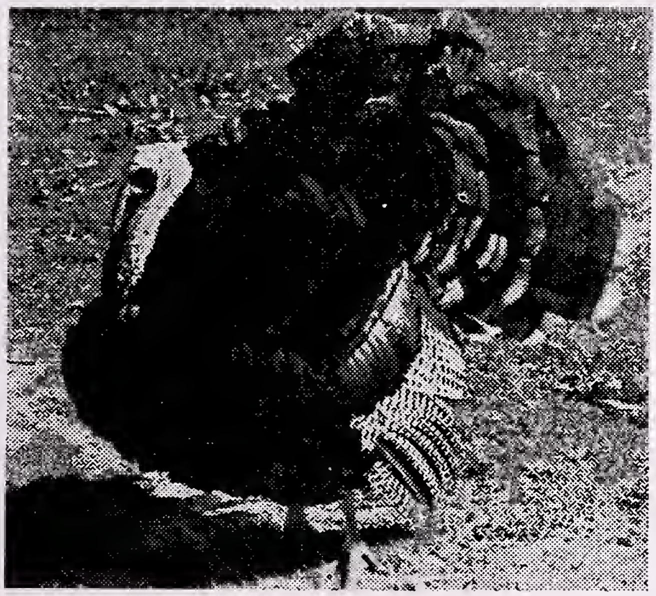

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*A.M.A.: *Handbook of Nutrition, Chicago, 1943.*

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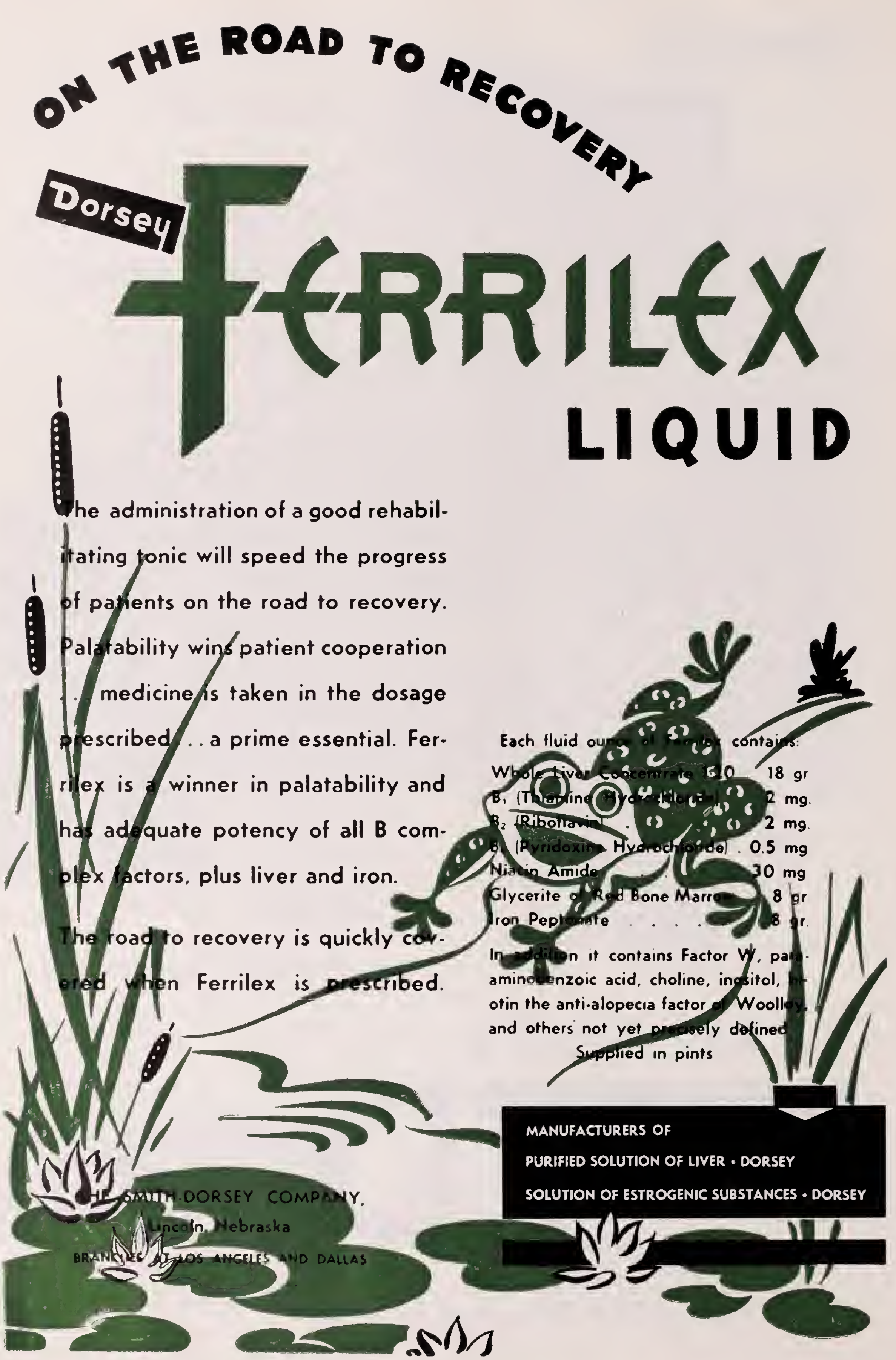

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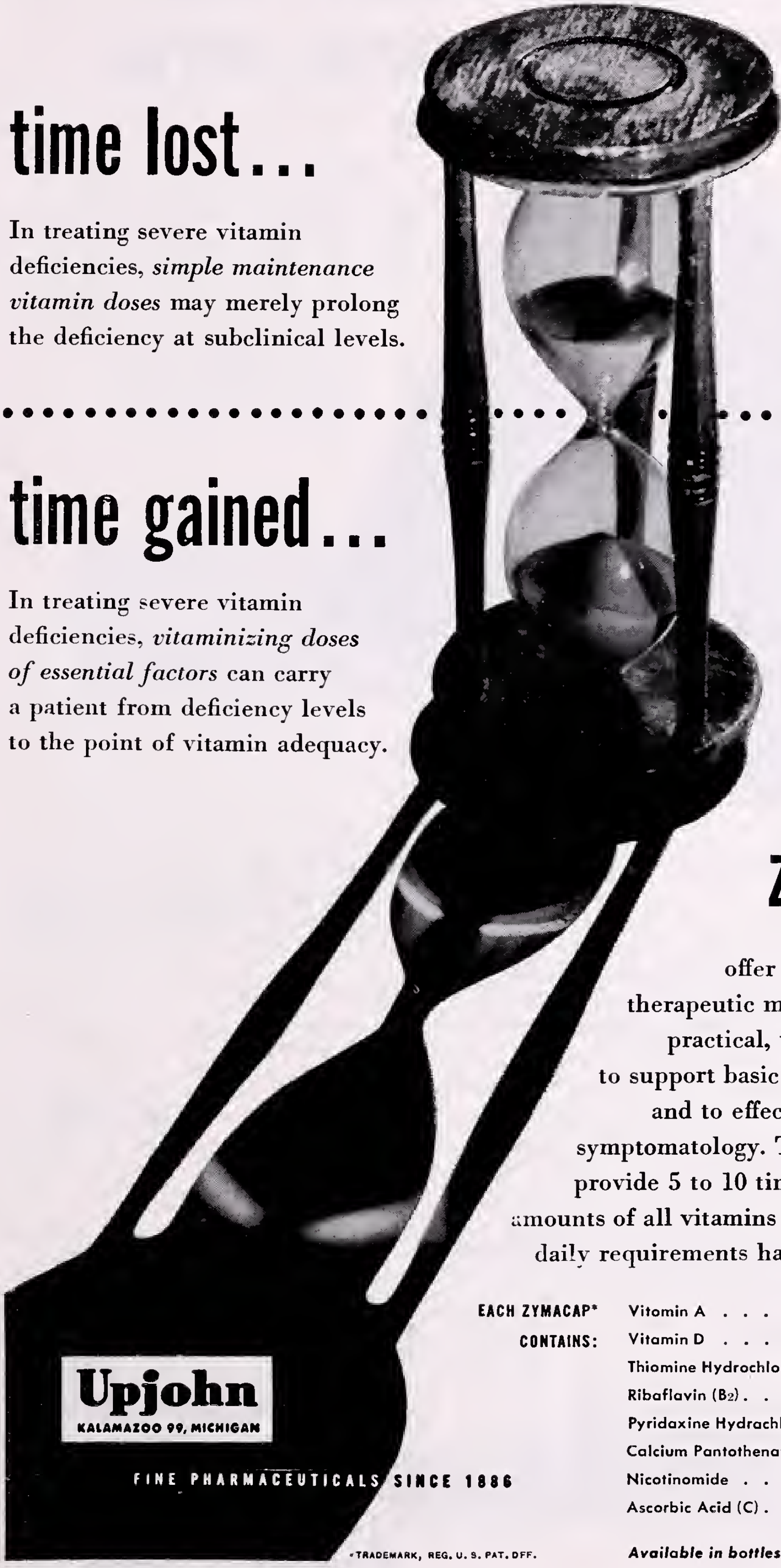

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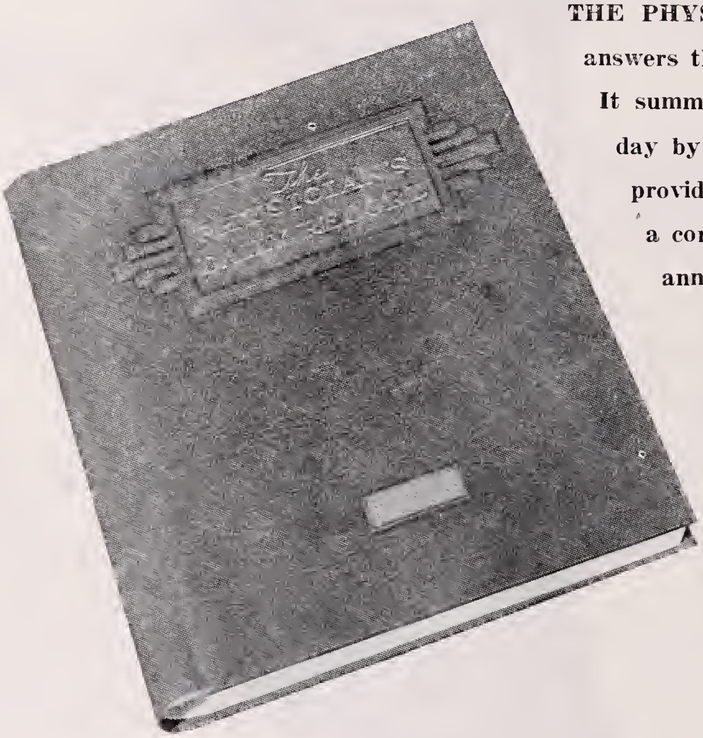

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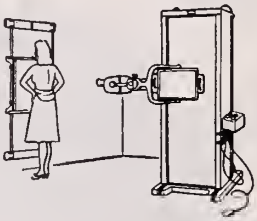

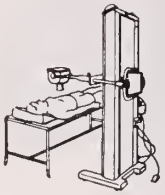

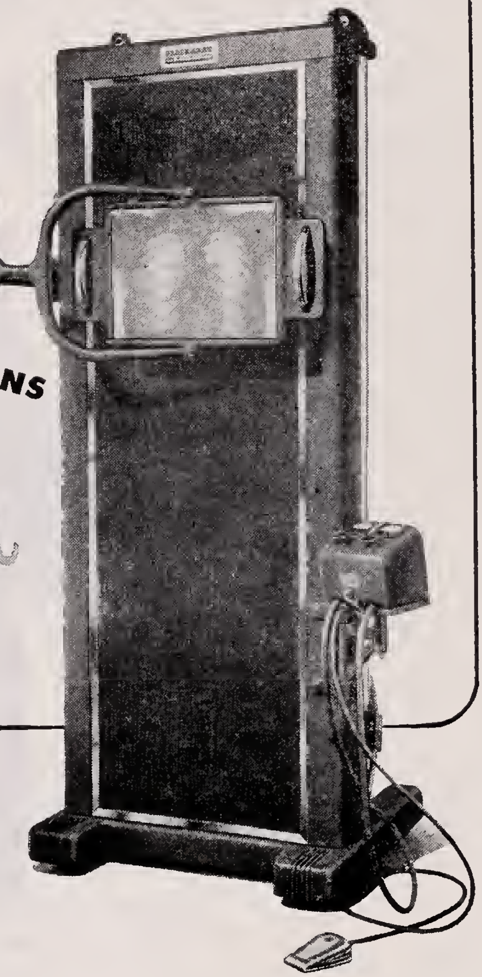

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Cancer

Dr. Gabriel Vazquez Arroyo of Guadalajara, Jal., Mexico, requested of Dr. Gus Street, Vicksburg, Mississippi, assistance to the Mexican Institute for the Study and Treatment of Tumors on the scientific methods developed at the Mercy Hospital—Street Memorial and manner of launching a campaign for the fight against cancer. The following reply was sent Dr. Arroyo, with an enclosure summarizing current literature (see Interpreting Medical Literature).

EDITORIAL SYMPOSIUM

My dear Doctor Arroyo:

Our best results are among cases detected early and receiving adequate surgical treatment at this early period. In properly selected cases, x-ray and radium yield equally good results in the early stages. Unfortunately too many cases seek treatment when the disease has progressed to an advanced stage, with regional or generalized metastases.

While we do not think that early eradication of the primary lesion is the final answer or the final solution of the cancer problem, it seems the best we have at present, and that along with thorough dissection and removal of regional lymphatics is what we now strive for, pending the time we may have more to offer.

There have been a few developments which have proved of value in dealing with advanced cases.

I. You are undoubtedly familiar with the work of Huggins reviving the use of orchiectomy in the treatment of advanced cancer of the prostate. We have had some very encouraging results from this method of treatment. On the other hand, we have had some very disappointing results, the patient continuing his downward course and coming to autopsy with uninterrupted generalized cancer. Along this same line of therapy we are very much encouraged by the use of stilbestrol in the treatment of cancer of the prostrate. The results of this type of therapy have been equal to or better than those of orchiectomy, provided the patient can be depended upon to take his medicine. We have been giving them three milligrams daily and the results are very encouraging. Some of the patients under our observation have been kept comfortable and the disease held in check for over five years.

II. The Use of Testosterone in Advanced Cancer of the Breast. I am sure you are familiar with the publications of Adair and others on this subject. Our results with this type of treatment are disappointing in the majority of cases; but spectacularly favorable in an occasional case. On the other hand, relief of pain in the presence of metastasis to bone is obtained in the majority of cases, thus adding to the comfort of the patient. We usually start out with a dose of 100 milligrams given intramuscularly daily for the first thirty days and then at diminishing frequency.

III. The Use of Nitrogen Mustards. Our small experience with HN2-HCL does not differ except in extent from that published by Doctor Cornelius P. Rhoads of Memorial hospital, New York City. We now have under treatment a patient with Hodgkin's disease who has been maintained on x-ray therapy until it ceased to control the disease. HN2-HCL therapy was started in the presence of wasting and skin lesions with intense itching. General improvement is questionable, and the itching has been unaffected.

IV. Radioactive Isotypes. Doctor Thomas P. Dominick, our roentgenologist, has had some experience with radioactive phosphorus, P32. This substance proved to be of no value in acute leukemia. It is of some value in chronic leukemia but seems no better or not even as good as x-ray therapy in such patients. P32 also seems to afford no advance in the management of Hodgkin's disease or lymphosarcoma. However, it proved very useful in the management of polycythemia vera.

Radioactive cobalt, with a half life of somewhat less than four years offers no advantage over radium except that it may be less expensive.

Our method in cancer case-finding consists of thorough examination of all patients entering the clinic, regardless of the type of complaint which may bring them to the clinic. We coöperate with the State Chapter of the American Cancer Society which urges every practicing physician in the state to do the same thing. We also coöperate with the State Chapter in its efforts to keep the public cancer conscious, aware of significant symptoms of cancerous disease, urging the public to seek medical service early in the presence of suspicious symptoms, and to obtain periodic medical examination after the age of forty regardless of symptoms.

Management of Large Uterine Myoma*

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OVER 400 YEARS before the birth of Christ, Hippocrates[1] wrote about "uterine stones" which were delivered from the vaginas of elderly maidens. In the second century A.D., Galen[2] designated myomas as "scleroma." Nine centuries later Avicenna,[3] the highly celebrated Arabian physician and philosopher, described in his book *Al Kanoon* a variety of solid tumors of the uterus that could be diagnosed by palpation stating that these tumors might be confused with cancers and phlegmons of the uterus and mentioned that they gave rise to symptoms including weakness, loss of weight, difficulty of urination and defecation, and edema of the feet. Ambroise Paré[9] (1510-1590) is said to have been "the first to bisect and examine a fibroid uterus removed at autopsy, the first to describe it." In his *De Hominis Generatione* one finds "but the tumor **mola** . . . is nothing else but a false conception of deformed flesh, round and hard, conceived in the wombe as it were, rude and imperfect, and not distinguished into members, coming by corrupt, weake, and diseased seed, and of the immoderate flux of the termes, as it is defined by Hippocrates." His book (1564) presented the picture of a submucous fibroid.

In the eighteenth century John Hunter[5] used the term "fleshy tubercles." In 1813 Bayle[6] called myoma **corps cellulofibreuse** and showed the different locations in which they might grow. Clarke[7] (1814) wrote an excellent chapter on fibroids, describing a single myoma as a "tubercular tumor." In 1843 Vogel[8] demonstrated microscopically the resemblance between myometrium and the tumor growth. One year later Ashwell[9] proved to his satisfaction the difference between fibroids and uterine malignancies. Billroth [10] suggested the designation "myofibromata." Klob and Rokitansky[11] are given credit for the term "fibroid tumor." Virchow[18] introduced the excellent name "myoma" shortened from **myoma laevicellulare**, and subsequently Mallory[13] employed "leiomyoma."

Hysterectomy and Myomectomy

On November 17, 1843, Charles Clay,[14] a leading ovariotomist of Manchester, England, successfully performed a supracervical hysterectomy. Like many of his predecessors he had made a diagnosis of "ovarian tumor" but unlike them he did not leave the myoma undisturbed on finding it instead of an ovarian cyst. Incidentally, many writers believe that Ephraim McDowell,[14] the father of ovariotomy, was confronted by fibroids in his second and fourth cases. Furthermore, they emphasize that for most of the nineteenth century ovariotomy was considered to be very dangerous and uterine surgery was regarded as well-nigh impossible. Peritonitis was feared by the ovariotomists as the most common cause of death while in uterine operations the possibility of hemorrhage and shock caused great dread. A. M. Heath,[15] also of Manchester, removed a large myoma by supravaginal hysterectomy on November 21, 1843. His preoperative diagnosis was ovarian cyst but the patient expired of hemorrhage and shock. He described ligation of the uterine arteries.

One of the most tragic cases on record is that of Clay.[19] The description appeared in the *Transactions of the Obstetrical Society of London* as follows, "The uterus itself, was enlarged to twenty-four pounds in weight with cystic deposits amounting to about eight pounds, making thirty-two pounds in all. Having proceeded so far, the question arose, 'what was to be done?' I determined to extirpate the whole, converting the vagina into a cul-de-sac. The operation was soon and easily accomplished. Inflammation set in and was subdued. Subsequent depression and exhaustion supervened from which she rallied. On the twelfth day she was doing so well that every reasonable hope was entertained of her ultimate recovery. A nutritious diet had been given and everything promised well. From the fact of both ovaries and uterus having been extirpated, my interest was doubly excited. On the thirteenth day the nurse put an end to all the flattering prospects by an accident. On lifting her from the bed the patient fell on the floor somewhat violently.

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Fig. 1

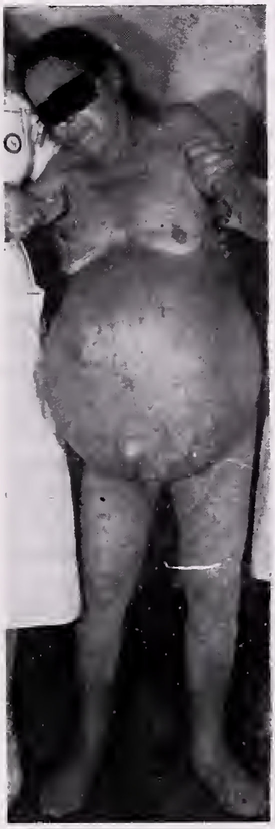

Fig. 2

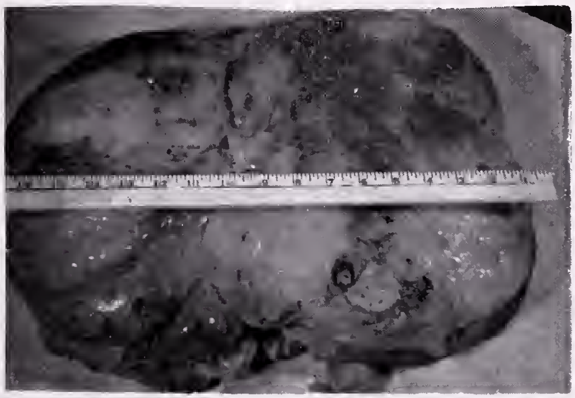

Fig. 3

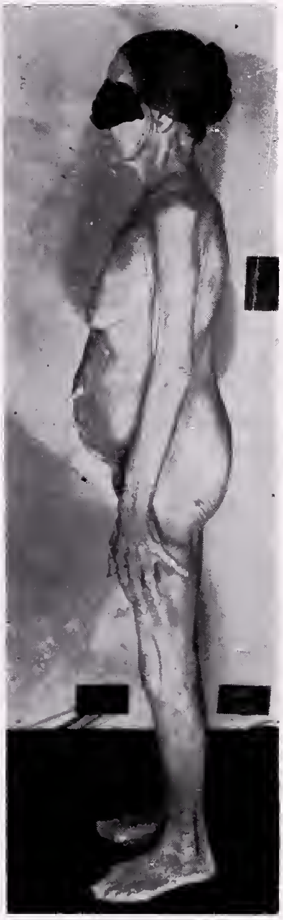

Fig. 1: On hospital admittance patient weighed 145 pounds and was too weak to stand alone.

Fig. 2: Mensuration of bisected myoma with a yard rule.

Fig. 3: Twenty-five days after operation patient weighed seventy pounds.

She died on the morning of the fifteenth day."

W. L. Atlee[18] successfully myomectomized a patient in August, 1844. Two years later John Bellinger[18] performed a deliberate supracervical hysterectomy with the correct preoperative diagnosis of "uterine tumor." The patient of this American surgeon died on the fifth day due to peritonitis. The experience of Walter Burnham[19] of Lowell, Massachusetts, has often been told. Operating in June, 1853, with a diagnosis of ovarian cyst he was confronted by vomiting and the resultant extrusion from the abdomen of an irreplaceable tumor. Therefore, he was forced to excise the mass. Despite the fact that the patient survived he decided not to attempt hysterectomy again inasmuch as he considered it too dangerous a procedure. However, this resolution was soon discarded and he thereafter performed fifteen hysterectomies in cases of uterine myoma with three successes. On September 1, 1853, Gilman Kimball,[20] also of Lowell, Massachusetts, successfully hysterectomized a patient after making a diagnosis of "uterine fibroma." In November, 1856, William J. Baker,[21] a Tennessean, performed a supracervical hysterectomy and a bilateral salpingo-oophorectomy with success. His preoperative diagnosis is said to have been "obscure." In August, 1861, E. Koeberle,[22] in Germany, removed a uterus containing fibroids. The patient recovered and his **Serre-noeud** became well known in the years that followed.

Very Large Myomas

In 1888, Hill[23] successfully removed a forty-seven-pound myoma. December 16, 1902, Clarence Webster[24] surgically obtained an eighty-seven-pound cystic one with survival of the patient. July 30, 1906, Thomas S. Cullen[25] successfully extirpated an eighty-nine-pound cystic myoma which he reported eight months after the operation stating that the fifty-eight-year-old patient was enjoying perfect health and gaining rapidly in weight. He stated that she had noticed the tumor for approximately twenty years and that she was delivered of a healthy baby about eighteen years prior to operation. Kelly and Cullen,[26] in their excellent book *Myomata of the Uterus*, considered this case to be the largest authentic successful one on record. In 1923 Charles Farmer[27] reported recovery after removal of a thirty-five-pound tumor. The following year M. Y. Marshall[28] successfully removed a forty-seven-pound myoma. May 26, 1925, Thomas G. Stevens [29] extirpated a uterine fibromyoma weighing forty-seven pounds, five ounces. In his article he shows the block and tackle which was used to remove the tumor. In 1933, J. B. Greenhill[30] reported a cystic fibroid weighing forty-seven pounds and simulating an ovarian cyst which was removed at autopsy performed October 24, 1928. He stated that paracentesis had been performed "about seventy-five times during the last year." When admitted to Cook County Hospital the condition of the colored nulligravida was such that operation was considered contraindicated. In the May, 1947, issue of the *American Journal of Obstetrics and Gynecology* we[31] reported the removal of a fifty-five-pound solid uterine myoma which measured seventeen inches in diameter. At the time of hospital admittance the white patient, aged fifty-nine years, weighed 145 pounds and was too weak to stand alone. On the twenty-fifth postoperative day the scales showed a loss of seventy-five pounds and walking did not require assistance. (See figures). Six months later her weight was 124 pounds. Subsequently she has enjoyed good health.

Differential Diagnosis

Cases presenting large abdominal tumors must be given the benefit of careful differential study. In each case it is necessary to obtain a detailed history and thoroughly examine the patient, otherwise errors will be committed. We have seen cases presenting large uterine myoma who gave history of amenorrhea, nausea and vomiting, breast changes, urinary frequency and "the feeling of movement." Some of these cases were grunting and groaning in the labor room when first encountered. Obviously, in such instances fetal parts and movements are not palpable and fetal heart tones are not audible. There is no placental souffle. Roentgenograms are negative for fetal shadows. One of the most interesting cases we have observed is that of a negress who was delivered of a seven-month baby by an interne who summoned help because he could not deliver the "second twin." The latter proved to be the largest submucous fibroid we have seen. In certain cases of small myomas in which the uterus is soft and symmetrically enlarged one must have a pregnancy hormonal test to avoid making a diagnostic mistake. In these cases or in those in which one may be dealing with myoma and pregnancy one will do well to repeat "negative" tests and to examine the patient at intervals of two weeks in order to ascertain the rate of uterine enlargement.

Patients with very soft myomas extending above the umbilicus have been admitted to Charity Hospital at New Orleans stating that they had been operated upon two to twelve months prior and told that they were pregnant. An operator will not find himself in such an embarrassing situation unless he is careless. In this connection it must be stated that there are some myomatous uteri which look and feel very much like a pregnant uterus when the abdomen is opened. If one should be so confronted he should look for a corpus luteum of pregnancy. The location and size of the round ligaments should be observed remembering that they are usually normally placed and thickened in cases of cyesis. The uterus must be palpated with extreme gentleness and absolute thoroughness noting not only its consistency and contour but also the presence or absence of contractions or other movements. If uncertainty as to the diagnosis still exists an attempt should be made to aspirate amniotic fluid with a spinal needle. In the event the operator is still confused a hysterotomy would be far preferable to a hysterectomy with removal of a pregnancy. Careful preoperative study will prevent one from finding oneself in such a predicament.

As Wharton[32] states, "the cyst which would simulate a soft, existing myoma most exactly is the pseudomucinous cystoma. If one can feel a small, hard uterus separate from the large, soft mass the diagnosis of cyst is fairly certain." All of us have seen papillary cystadenomas and cystadenocarcinomas filling the pelvis and extending above the umbilicus in such a fashion as to make differentiation from myomas very difficult or impossible. Curtis[3] has emphasized the importance of searching for fluctuation if an ovarian growth is suspected. Due to marked tension or solid elements some cysts are palpably hard. Furthermore, if the abdominal wall is considerably distended it may be impossible to tell by palpation whether the tumor is ovarian or uterine in origin. Under such circumstances we have found the location of the cervix uteri to be of diagnostic importance. Cysts are less apt to pull the cervix up as large myomas often do, but on the other hand they may displace the uterus laterally, anteriorly or posteriorly. In the very difficult or diagnostically impossible type of large ovarian tumor versus large myoma case, one may be reconciled by the fact that laparotomy is indicated in either instance and, as Novak[34] puts it, "the damage to the surgeon's diagnostic pride is usually greater than the patient's welfare." Mesenteric and other intra-abdominal cysts, ascites, adiposity, nephroptic tumors, et cetera, are mentioned solely for the purpose of completeness.

Treatment

As has been indicated one must ascertain the status of each given case. Too much emphasis cannot be placed upon completeness of the history and thoroughness of the physical examination. Laboratory studies will include complete blood "picture," sugar, N.P.N, uric acid, serum proteins, CO_2 combining power, sedimentation rate, and prothrombin time determinations, bleeding and coagulation rates, matching and typing, Rh study, and serologic tests for lues. The examination of catheterized specimens of urine including complete chemical and bacteriologic study and tests for renal function (P.S.P., urea clearance and Fishberg concentration) should be performed. B.M.R. readings may be of value. If there is a possibility of pregnancy, a hormonal test, preferably Friedman-Lapham, should be employed. Roentgengrams of the chest and abdomen are valuable. In certain cases excretory urograms are desirable. The matter of retrograde pyeloureterography should be considered in each case. It is certainly important to know the exact status of the urinary tract. An electrocardiogram should be part of the routine.

Furthermore, the advice of a medical consultant is apt to prove of inestimable value in many cases. As Conrad Collins[35] has pointed out, the edema of the lower extremities in these cases may be due to phlebothrombosis rather than pressure per se. Consequently the matter of vein ligation must receive proper consideration if pulmonary embolism is to be prevented.

Presurgical therapy includes alleviation of discomfort by the use of sedatives, backrest, et cetera. Even more important from the viewpoint of preparation for operation is the combatance of the anemia which is present in cases presenting large myoma. Many of them also have marked hypoproteinemia. Blood transfusions and plasma infusions produce marked improvement. Amino acids, liver extract, and iron are also of great value. The condition of each case will determine the amount of intravenous fluid to be administered Ten per cent dextrose in sterile distilled water is preferable to saline solution, inasmuch as it provides nourishment, helps protect the liver, and does not contain the sodium ion which could aggravate edema. Multiple vitamin administration is important due to the fact that patients having large tumors suffer from vitamin deficiencies, their economic stata are low, and their I.Q.s are not very high, consequently, their diets are inadequate. If tolerated, a vitamin-rich, high caloric and otherwise nutritious diet is in order. Alkalinization is the rule in cases showing acidosis and also to prevent transfusion reactions which may come about as a result of precipitation of acid hematin crystals in the kidneys. Constipation must be relieved. Obviously, any infection present should be treated. In this day of chemotherapeutic agents and antibiotics such treatment has become greatly simplified and quite effective.

When the patient arrives in the operating room under proper sedation, which will be governed by her general condition, a catheter should be in the bladder and draining, an infusion of 5 per cent dextrose in water should be in progress via a number 17-gauge needle. At least 1500 cc. of compatible, Rh suitable, blood should be at hand. These patients are apt to bleed profusely and their tumors contain considerable blood. An expert anesthetist will coöperate in the decision regarding the anesthetic agent to be used. As a general rule we would say that ethylene is the safest. If necessary ether should be employed. Although many uterine and ovarian tumors extending above the umbilicus have been removed under spinal analgesia in the Charity Hospital at New Orleans, we would prefer not to use it in very large myoma cases as a rule. One should consider the advisability of fractional spinal analgesia or intercostal nerve block in very poor risk cases. After exploration has confirmed the diagnosis of large uterine myoma the incision should be adequately enlarged, undue blood loss being wisely controlled. In clamping and ligating blood vessels, one must take care to avoid injury to the bladder and ureters. These structures are apt to be considerably displaced and distorted. Likewise trauma to the intestines must be guarded against. One should be prepared to repair or resect gut. It is usually advisable to ligate the omentum in such a fashion as to leave a portion of it attached to the tumor rather than to tear it off of an area which might be undergoing suppuration. Here again each instance calls for individualized cerebration. Shock should be prevented as much as possible and treated promptly. Blood, adrenal cortical hormone, and ephedrine should be given as indicated. In these cases the ovaries are usually hopelessly involved, therefore, they are removed with the uterus and salpinges. Incidentally, as a rule, one does a total hysterectomy inasmuch as the cervix uteri is usually pulled up in such a fashion that it would require more time and be more difficult to perform a supracervical operation. Peritonization should be adequate. Sponges, packs, and instruments must all be accounted for and hemostasis must have been secured. As we have indicated, careful ligation of blood vessels is very important. Hot packs may be applied for the control of oozing. Fibrin foam and thrombin may be used to advantage in certain cases. Abdominal wall closure must be automatically performed. Pressure in the form of mechanic's waste placed over the wound is of definite value. Furthermore, we are among the advocates of the use of sand bags for twelve hours or longer.

Postoperatively one must continue the anti-shock measures consisting of blood, dextrose solution, and adrenal cortical hormone. Morphine or demerol is given for the prevention of pain. Oxygen and carbon dioxide are indicated in some cases. An oxygen tent may be lifesaving in certain instances. Adequate fluid intake must be given usually via vein for the first three days but one must be careful not to "waterlog" the patient. Early bed exercises are definitely indicated. Abdominal distention should be prevented by using rectal tubes, Wangensteen suction in some cases, and prostigmine. For the first five days or longer an indwelling urethral catheter makes it easy to keep an accurate check on the urinary output, guarantees an empty bladder, obviates the necessity for repeated catheterization, facilitates treatment of any urinary vesical infection, and affords urine for microscopic study at all times. Vitamins should be given in addition to other measures that will improve the patient's general condition. As previously set forth, chemotherapeutic agents and antibiotics will be ordered as indicated in each case. The matter of early ambulation calls for individual consideration.

SUMMARY AND CONCLUSIONS

1. The history of uterine myomas constitutes one of the most fascinating chapters in the history of gynecology.

2. Successful removal of uterine myomas weighing more than twenty-five pounds have been authentically reported by Hill, Webster, Cullen, Farmer, Marshall, and Stevens. The tumors in the cases of Webster and Cullen weighed eighty-seven and eighty-nine pounds respectively and were cystic.

3. The authors reported the removal of a fifty-five-pound solid uterine myoma in the May, 1947, number of the *American Journal of Obstetrics and Gynecology.*

4. As the result of education fewer and fewer cases of very large uterine myomas are being seen in this country. The patient who waits until she is mechanically incapacitated by her tumor is indeed a rarity in this decade.

5. Differential diagnosis includes the consideration of pregnancy, ovarian tumors, mesenteric and other intra-abdominal cysts, ascites, and adiposity. The importance of a detailed history and thorough examination of the patient cannot be overemphasized. Roentgenography and laboratory tests are of definite value in making the correct diagnosis in many cases.

6. The preoperative management of these cases is very important. The work-up should be complete and everything must be done to improve the patient's general condition. Blood transfusions, vitamin administration, and the treatment of infection with chemotherapeutic agents and antibiotics are definitely indicated.

7. While upon the operating table the bladder must be kept empty and an infusion should be in progress. The prevention of shock demands first-place consideration and any evidence thereof calls for prompt action. Blood transfusions are often lifesaving.

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The mounting toll of heart diseases and cancer, which are primarily disorders of middle and late life, tends to foster too much complacency over the continuing reducation in the death rate due to tuberculosis. It is well to be reminded that death figures tell but one side of the story. To look behind mortality stastistics and to consider their real meaning in terms of lives saved or ended prematurely is a salutary corrective to unwarranted optimism regarding tuberculosis.

The Use of Vioform Ointment in Dermatology*

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VIOFORM, AN amorphous powder with the chemical formula 7 iodo-5 choro-8 hydrox y quinoline, has long been used as a dusting powder in chronic granulating wounds and for infections of the vaginal tract. The use of vioform in a water-soluble ointment base and the dermatologic limitations of vioform are not well known. The present report concerns twenty-three patients treated by means of vioform* in a water-soluble base who presented various forms of chronic dermatitis not immediately responsive to other treatment. No attempt was made in this clinical study to evaluate the action of vioform upon specific organisms, nor was it used in dermatologic conditions readily amenable to other forms of therapy with the exception of dermatomycosis of the feet.

In a recent publication, Saunders[1] noted that vioform in petroleum was irritating when used in four out of fourteen cases reported, and came to the conclusion that vioform was too toxic for further trials in eczematous lesions. Sultzberger and Wolfe[2] have written, the same author notes, a more favorable report on the use of vioform in petrolatum. It is to be noted, however, the medicinals applied in greasy vehicles are often more irritating in eczematous diseases than are the same medicinals in non-greasy preparations and for this reason a water-soluble ointment was considered worthy of a trial.

Of twenty-three patients treated with vioform in 3 per cent concentration in a water-soluble ointment base, twenty-one were patients with chronic eczematoid dermatitis of from six months to three years' duration. In all of the chronic dermatoses it was suspected that bacterial organisms were at least in part responsible for the presenting condition, as secondary invaders. The acute dermatoses were considered largely contact in origin.

Of the twenty-three patients treated, twelve presented chronic localized eczematous dermatitis of the hands, variously labeled "housewife's eczema," or chronic eczematoid contact dermatitis. Nine patients responded favorably to the initial use of 3 per cent vioform ointment applied twice daily with the strict avoidance of soap. Six patients remained clinically well during the follow-up period of four months. Three patients cleared their dermatitis initially but had mild recurrences from three to four weeks later, upon resuming household duties. Two patients obtained no relief from their dermatitis after five weeks' therapy, and one patient became definitely worse. Patch tests to vioform powder and the vioform ointment used were negative in the latter case.

Three patients treated were diagnosed as having chronic dermatitis of the forearms and hands. Two of these patients were definitely sensitive to mercurials used in dispensary offices, and one, a dentist, was found to have a positive patch test to novocaine. All of these patients were patch tested to vioform ointment before use, and all were negative. One patient cleared his dermatitis after eight weeks of therapy and remained well; one patient improved after three weeks but has occasional mild recurrences, and one patient is unimproved. In these three patients the offending substance was withdrawn insofar as it is possible but with the widespread use of mercurials in the household and medical offices it cannot be certain further contact was prevented.

Two cases of chronic idiopathic generalized exfoliative dermatitis were treated. Many forms of treatment had been used by these patients previously without obvious improvement. The use of vioform ointment was of immediate benefit in both patients, causing alleviation of itching and lessening of erythema of the skin. One of these patients is apparently well after three months of treatment; the second remains stationary but improved.

One patient with discrete, well defined, dry eczematoid patches over the arms and legs diagnosed as chronic nummular localized neurodermatitis of fourteen months' duration was relieved of pruritis and the skin lesions slowly improved over a period of four weeks. The only additional therapy in this case was phenobarbital as a sedative. There has been no known recurrence to date.

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*Supplied by the Ciba Pharmaceutical Company, Summit, N. J.

†From the Birmingham Medical and Surgical Clinic.

Five patients with chronic mycotic infections between the webs of the toes associated with severe sweating of the feet improved under vioform ointment therapy and have remained well for two or three months, or as long as the patient has been observed. In none of these patients was there evidence of acute pyogenic superinfection.

COMMENT

In view of the known limitations of patch-testing as a means of determining sensitivity to locally applied medicants it is assumed that the one patient who noted an acute exacerbation of her dermatitis of hands when vioform ointment was applied proved sensitive despite negative tests. This is not an unduly large percentage (4.3) of reactions to such medicants, but it is admitted the series of cases reported is small. All patients treated exhibited a bright yellow pigmented area deposited about the treated parts but no patient complained about this temporary disfigurement. No generalized toxic effects were recorded in this series.

It is recognized that the removal of external irritating substances frequently causes prompt alleviation in skin diseases of contact origin. Thus, it cannot be stated that any medicant or form of therapy is largely responsible for cure in patients complaining of dermatologic conditions similar to the present series reported. However, in many of the patients presented, dermatologic therapy of another type was insufficient to cause disappearance of skin lesions, and vioform ointment was successful in several such instances. It would appear then that the effectiveness of the vioform ointment was more than just a protective emolient, and that is it mildly stimulating and antiseptic in action.

SUMMARY

1. Three per cent vioform in a water-soluble ointment base was found helpful in chronic eczematoid dermatoses of ill-defined origin.
2. One patient of twenty-three was apparently sensitive to the preparation used, although patch-tests were negative.
3. No generalized toxic reaction was noted but the treatment of larger numbers of patients is needed before evaluation is complete.

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IN PROSPERITY DOCTOR GETS SMALLER PART OF AVERAGE MAN'S DOLLAR

The proportion of national income spent for medical services has declined since 1940, according to a study made by Frank G. Dickinson, Ph.D., Director of the Bureau of Medical Economic Research of the American Medical Association. That this has happened in spite of the climbing cost of medical care and increased demand for medical services is emphasized in an editorial in the September 27 issue of **The Journal of the American Medical Association.**

The editorial states:

"Costs of medical care as a whole tend to move countercyclically; in a depression such costs comprise a larger share of total consumer expenditures and national income than they do in prosperous times. In a period such as the present, the trend is toward more furious inflation and lower relative expenditures for medical care. This is borne out by Dr. Dickinson's figures—medical care took 4.4 per cent of total consumer expenditures in 1932 and 1933, then the share trended downward to 3.9 per cent in 1946. Necessities always loom more important in depression; luxuries, in prosperity. But all evidence indicates that, case for case, medical care costs more each year particularly where hospital care is concerned. Thus the decline in relative importance of medical care expenditures has occurred in spite of climbing costs of specific treatments, and an over-all increase in demand for medical services arising from the aging population, the high birth rate and popular education in health which lessens fear of hospitals.

"The declining percentage of income expended on medical care is parallel by increasing proportions spent on alcoholic beverages, recreation, personal care and jewelry; these items in the budget were selected by Dr. Dickinson not for moral reasons but for comparability in the size of total expenditures.

The Diagnosis and Treatment of Anemia*

L. T. CARL, M.D.
Jackson, Miss.

THE DIAGNOSIS OF anemia is usually obvious from study of the blood. A healthy male should show a hemoglobin of 100 per cent or between 90 per cent and 100 per cent. However, one routinely sees female patients who apparently are in good health and who show Hbg. of 70 per cent to 80 per cent. Kracke examined the blood of 312 young apparently healthy Southern college women and found the average value to be 70 per cent. A reading of 85 per cent in a female patient is probably a satisfactory level for women in this part of the country.

One not infrequently sees patients, usually women, who have a red count of 4½ to 5½ millions. These patients would not be considered anemic. Yet these same patients may show an Hbg. of 50 per cent to 60 per cent. and the blood smear shows cells very poor in hemoglobin. After all, it is the hemoglobin which transports oxygen, and a patient is just as anemic with 5,000,000 cells containing only half their full quota of hemoglobin as she would be if the count were 2,500,000 and the cells fully saturated with hemoglobin. It has been shown that in the development of the most common type of anemia, a hypochromic one, the value of hemoglobin falls off sooner and more rapidly than the red count. Also with rapid degeneration of blood, as in pernicious anemia under treatment with liver, the rise in hemoglobin lags behind in the RBC. Consequently the hemoglobin is much more informative as to the oxygen-carrying capacity of the blood than is the red count.

After the patient is found to be anemic, the next thing is to determine the cause, for one must treat the cause in order to treat successfully the anemia. Often the anemia will clear up after removal of the cause. The ideal classification of anemia would be an etiological one, classifying each one as to its exact cause. Fortunately this is often possible in such conditions as faulty nutrition, malaria, bleeding from the gastro-intestinal or genito-urinary tracts, anemia from blood destruction, from chemicals, intestinal parasites, etc. But quite often the cause is not apparent from the history and physical findings, and the one looks to the blood study to give information as to the likely causes. Some type of classification which would orient one toward the cause and the most suitable treatment is to be desired.

Such a classification of anemia was originated by Wintrobe in 1930. It is based on the determination of the volume and hemoglobin content of the average red cell. At present, the great majority of case reports and blood studies are reported according to this method. Its advantage is that it gives an indication as to the therapy. For it has been found that those anemias which respond to the administration of liver or stomach extract, or of folic acid, are characterized by having cells whose average volume is greater than normal or more rich in hemoglobin than normal; those responding to iron therapy have cells smaller than normal or poorer in hemoglobin than normal; while those anemias which have cells with a normal volume are usually very refractory to treatment of any kind. The classification of the anemia by this method may sometime indicate its cause where it was not apparent before, and indicate what further clinical investigation is necessary to track down the etiology. You are probably familiar with this method, but we wish to emphasize its value and briefly discuss anemia from this viewpoint. To determine the average volume of the inidividual red cell, or as it is called, the Mean Corpuscular Volume, the volume of packed red cells in 1,000 cc. of blood (obtained by multiplying the cell volume by 10) is divided by the red count expressed in millions. The range for normal blood is 85 to 95 cubic microns. Anemias that show cells smaller than normal are called microcytic anemias, those whose cell volume comes within this range are called normocytic, and those that are larger than normal are called macrocytic. To classify further an anemia, the hemoglobin content of the average red cell, or the Mean Corpuscular Hemoglobin, may be determined by dividing the grams of hemoglobin in 1,000 cc. of blood by the red cell count expressed in millions, the resulting figure being expressed in micro micrograms. The normal range is 27 to 32. Anemias that show values for Mean Corpuscular Hemoglobin below normal are designated as hypochromic, those whose hemoglobin content is normal, as normochromic; and if greater than normal, as hyperchromic. According to this classification anemias are named according to the size and hemoglobin content of their cells. For instance, pernicious anemia is a macrocytic, hyperchromic anemia.

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*Read before the Central Medical Society, Jackson, Miss.

The only addition to the usual equipment, i.e., hemoglobinometer, counting chamber and microscope, necessary to determine these values is an hematocrit tube. A very convenient one is the Wintrobe tube. This tube has a small bore requiring less than 1 cc. of blood. Needless to say, the red count and hemoglobin should be as accurate as possible, and it is preferable to take the average of the red count done by loading both sides of the counting chamber with red cells. The hemoglobin must be expressed in grams.

The normocytic anemias, or those in which the cells show a Mean Corpuscular Volume approximately normal, are usually secondary to some low grade chronic infection, some degenerative process, or a non-bleeding malignancy. An example of such chronic conditions is chronic nephritis, syphilis, chronic tuberculosis without hemorrhage. The normocytic anemias are usually normo-chromic. This type of anemia is also seen in the leukemias or malignancies where the marrow space is crowded out by tissue foreign to it, with consequent anemia, although one may also see macrocytic anemia in these cases. Aplastic anemias are also normocytic and normochromic.

Treatment of the normocytic anemias should be aimed at removal or treatment of the causative condition. This may be successful in such conditions as syphilis, and tuberculosis. However, in such conditions as chronic nephritis, malignant tumors with metastasis, leukemias, replacement of marrow by foreign tissues, etiological treatment is of little or no avail. Liver, folic acid and iron may be tried, but usually are of little benefit. Arsenic seems to be of more benefit in such cases, and Fowler's solution or the cacodylate are used. Eventually these patients may require transfusions.

The microcytic anemias are the most frequent and make up the great majority of cases of anemia one sees. Kracke states that 90 per cent to 95 per cent of anemias are of this type. These have cells with an average volume smaller than normal. As a rule, these will show a decreased amount of hemoglobin in the cells, and are then called microcytic hypochromic anemias. The microcytic hypochromic anemia is the typical result of: 1) inadequate intake of iron in the diet or poor absorption of iron, 2) chronic hemorrhage. Chronic low grade infection may also be involved. Under the first etiological heading may be included a variety of clinical entities or syndromes. One of these is the anemia of older infants due to a diet of milk unsupplemented by foods rich in iron such as meat or vegetables, the so-called milk anemia. Chlorosis, a condition seen much more frequently in the past than at present, is another example. Another condition of interest is the so-called idiopathic or achlorhydric hypochromic anemia. It is practically limited to women around the age of the menopause. It is associated with a gradually developing but often quite severe anemia, achlorhydria, possibly a glossitis, and nervous system changes suggestive of pernicious anemia. Typing of the anemia, however, shows it to be a microcytic hypochromic anemia, and it yields to large doses of iron. To this symptomatology there is sometimes added that of dysphagia. Indeed, this symptom may dominate the picture. The dysphagia is thought to be due to a disturbance in the neuromuscular mechanism of swallowing, possibly due to the absence of some essential factor which these patients are unable to absorb or produce. The patients may also show a peculiarity of the nails, which are concave and spoon-like, instead of convex. The symptoms, including the nail changes, improve under iron therapy, which must be persistent and long continued. Relapse may occur if therapy is stopped. The absence of hydrochloric acid in the stomach in these patients may contribute to its development, for absorption of iron from the duodenum is greatly retarded in the absence of HCL. To the microchromic anemias belongs also that of chronic malaria, and that of chronic malignancies. Microcytic hypochromic anemias occur in such conditions as bleeding hemorrhoids, menorrhagia, bleeding (oozing) peptic ulcer or malignancy of the gastro-intestinal or other tracts with slow bleeding, and also hookworm disease. The most common type of anemia seen in pregnancy is of the hypochromic, usually microcytic type. Whenever possible the removal of the cause of the bleeding is to be carried out if safe or feasible, transfusion if the anemia is of such severity as to endanger life, and iron in large doses. Although only a small fraction of the iron taken by mouth is absorbed, it has been proved that a greater proportion is absorbed with larger than with smaller doses. It has been shown that the iron requirement of women, up to the age of the menopause, is four times that of men. Ferrous sulphate, Blaud's pills, iron and ammonium citrate, and reduced iron are to be recommended in that order, the effective doses increasing in the same order. It now seems generally agreed that the addition of copper to iron medication is unnecessary, and any copper required is taken in adequate amounts in the average diet. As to liver in the treatment of the microcytic anemias, this too has proved to be superflous when adequate doses of iron are given. Whipple and his co-workers in 1930 reported a so-called secondary anemia liver fraction, which they thought was beneficial in the treatment of iron deficiency anemias. However, its value has not been proved. It has been repeatedly shown that this secondary anemia extract was no more effective than iron used alone in optimal doses. The highly refined liver extracts are also not indicated in the treatment of these hypochromic anemias. The vast majority of anemias requiring iron will be controlled by the prolonged administration of adequate oral iron, and it should very rarely be necessary to use iron by injection. Injection of iron may be painful or attended by reactions at times.

The third group is that of the macrocytic anemias. The average cell in this type of anemia has a Mean Corpuscular Volume greater than normal. The mechanism of their production is explained by a deficiency of the blood-forming factor, produced from the interaction in the stomach of the so-called extrinsic factor obtained in foods, with the intrinsic factor which is secreted in the stomach. If this factor is deficient, the red cells are able to attain only a limited stage of development, at which stage they are larger and more rich in hemoglobin than the mature normal red blood cells. The most typical member of this group of anemias is the classical pernicious or addisonian anemia. At the end of eight weeks of adequate liver therapy, a count of five millions is to be expected, regardless of the initial level. In most cases it can be maintained at a normal level by the injection of fifteen units of liver extract every two to four weeks. However, it is wiser to err on the side of too frequent rather than too few injections. Iron therapy will not prevent or relieve an exacerbation in pernicious anemia. Its use is seldom indicated, since the reticulo-endothelial system harbors large amounts of iron pragocytized from broken down red cells. The diet should be rich in foods with high content of the extrinsic factor, meat in particular. Transfusion is seldom indicated in the treatment of pernicious anemia, due to the rapid improvement following injections of liver extract.

Folic acid given orally has proved to be very effective in the treatment of pernicious anemia and macrocytic anemia in general. Since its clinical application to the treatment of pernicious anemia it has been repeatedly emphasized that while patients showed prompt hematological response, not enough time had elapsed to show whether, like liver, it would benefit or prevent the neurological symptoms of pernicious anemia. Now reports are appearing which show that apparently it is not effective in this respect, since patients on accepted adequate doses of folic acid have developed neurological symptoms or had relapses of neurological symptoms. It is probably still advisable to treat pernicious anemia cases with liver, or with a combination of liver and folic acid.

In addition to pernicious anemia there are other macrocytic anemias. Pellagra is often associated with a macrocytic hyperchromic anemia. Sprue, which is attended by a macrocytic anemia, is benefited by the administration of liver extract. However, folic acid apparently is the treatment of choice in sprue, since it has been shown to bring about rapid improvement of the diarrhea and anemia. During pregnancy there may occasionally develop a macrocytic anemia with achlorhydria, the so-called pernicious anemia of pregnancy. It has recently been shown that this macrocytic anemia of pregnancy may improve on large doses of liver extract by mouth when it has proved refractory to liver by injection.

Resection of the stomach for ulcer or malignancy may be followed by the development of macrocytic anemia. This is presumably explained on the absence of the pyloric region of the stomach in these cases, since this region of the stomach is most active in the secretion of the intrinsic factor. Anemia, after resection, does not reach a stage of symptom production until two to five years or longer after operation and occurs rather infrequently. Cirrhosis of the liver may also be associated with a macrocytic anemia, possibly due to the inability of the scarred hepatic tissue to store the blood-forming factor after its production in the stomach.

An interesting group of anemias of the macrocytic, hyperchromic type described by an English worker, Israels, resembles pernicious anemia. They differ from it in that they show free acid in the stomach, and do not respond to liver extract, even in heroic doses. Israels has named them achrestic anemias and he thinks that the failure to respond is due to inability of the bone marrow to utilize the blood-forming factor.

We wish to emphasize that we have made no attempt to mention all clinical anemia syndromes in relation to their classification by this method. They can be so classified, but the diagnosis of some anemias such as sickle cell anemia and familial hemolytic jaundice is self evident by the clinical picture or some peculiarity of their cells. We believe the value of typing and classifying every anemia in this manner is that we not only can confirm our clinical impression as to cause of the anemia, but also can often orient ourselves toward the cause in anemias whose cause appears obscure. Of great value also is the assistance one gets in determining therapy in each case. With the findings from the blood study of a microcytic hypochromic anemia we can rest assured that we are prescribing the best therapy when we simply give adequate doses of ferrous sulphate, a cheap medication, rather than burdening the patient's stomach or subcutaneous tissues or pocketbook with large and expensive and unnecessary doses of liver, or combinations of copper and liver and iron. On the other hand, we will realize the futility of treating a macrocytic anemia with iron when it requires liver and/or folic acid in adequate dosage. Valuable time and money will be saved for the patient in the majority of cases, and therapy will be more rational.

In conclusion, we wish to reiterate that treatment of the anemia alone without a thorough search for its cause and elimination or treatment of the cause is poor practice. Without treatment of the etiology, treatment of the anemia will probably not be successful, and valuable time will be lost should the patient be anemic from some remediable condition. In the search for the cause, typing of the anemia may be of great help in discovery of the cause.

Citizenship has taken on a new meaning since our country has become the pilot nation of the world. The world needs America above all nations. Our ideals, opportunities of citizenship, our altruistic spirit of helpfulness have given us commanding influence around the world. The patriot of today is one who is profoundly interested in world democracy. He wants to take the opportunities of citizenship to the last man, woman and child in the world.

Occupational Dermatoses*

J. G. THOMPSON, M.D.
Jackson, Miss.

THE IMPORTANCE of dermatitis in industry and in the armed forces has been brought to the attention of everyone who has been in anyway associated with the production of materials of war, or in the fighting of war. Now that the war is over and civilian production is trying to get started again, it would be to the advantage of everyone concerned to take advantage of all of the information that has been gathered both by individuals and by groups appointed by the government to investigate the causes, treatment, and prevention of a condition that has been estimated to cause 65 per cent of all time lost due to illness in some of the war plants. The introduction of many new chemicals and numerous so-called synthetics has added a staggering number of substances that can and do cause dermatitis both as sensitizers and as primary irritants.

Laws covering the relationship between employee and employer have lagged behind in some states and in many states do not exist at all as far as compensation for the injured employee is concerned, and in some instances the laws are so written that an employee may get a dermatitis from some outside source and still get paid because he is employed in a so-called hazardous occupation. Personally, the writer has never felt that a jury of the employees' or employers' peers is capable of rendering a correct decision as to whether the injured person should be compensated in part, in whole, or at all for an alleged occupational dermatitis. This decision should be reached by men trained in this particular field, and should have the full coöperation of chemists, engineers, and others fully familiar in the substances being used. As far as I have been able to find out there is no school, postgraduate training or otherwise that is training men for this particular field, but there are a few men who are devoting, if not their entire time to this field, at least a great deal of their time to a study of this subject. The American Academy of Dermatology and Syphilology put on a two-day special course conducted by Doctor Louis Schwartz, Doctor Sam Peck, and Doctor John Downing at Cleveland, Ohio, last December. The number of substances and processes listed and discussed by these men as capable of producing dermatitis was astounding, and to attempt even to list a part of them would make a list too long to read at any one time.

But to get a few facts that can be used in every day practice I shall give you some of the things that I have gleaned here and there mainly from Doctor L. Schwartz.

A. The actual cause of dermatitis can be divided into mechanical, physical and chemical agents. Since this is to be a very short paper it would be better perhaps to confine our discussions to the chemical causes and not attempt to discuss the injuries caused by the first two. Dermatitis is more prevalent in summer than in winter. This is probably due to the skin not being as well able to defend itself when wet, and to the sweat making a solution of the offending substance and getting it into close contact with the epidermis. The pH may also be changed by the substance absorbed in the sweat. This would have a tendency to lower the normal defense mechanism and make infection more prevalent.

B. Chemical causes act in two ways, that is to say as primary irritants and as skin sensitizers. The primary irritants can cause dermatitis on normal skin if allowed to remain on the skin long enough and in sufficient strength. I should like to repeat, "and in sufficient strength." They act right where they are applied and nowhere else. Skin sensitizers may not cause any trouble at all the first time they come in contact with the skin, but sufficient time may cause dermatitis where they are applied or somewhere else. Anything can be a sensitizer.

C. One of the most common types of occupational dermatitis is the dry, fissured scaly skin seen on the hands of people who use a lot of soap and water in attempting to take care of dishes, diapers, laundry and so forth. The soap removes the oils from the skin, causes it to fissure. Soap may act as a primary irritant of the mild type, or as a sensitizer. I feel that it acts more often as a mild primary irritant. A workman may get an acute eczematoid type of dermatitis. A great deal of attention should be given to the location of the eruption. **and the history should be taken with care.**

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*Read before the Section of Medicine at the seventy-ninth annual session of the Mississippi State Medical Association, Jackson, Miss., May, 1947.

Doctor Schwartz says that a good rule to follow is that if the eruption hasn't cleared in **two months** after the patient has been removed from contact with the allegedly offending substance that it is not occupational. It is difficult to separate occupational from non-occupational dermatitis. The patch test can be used to a great advantage in some instances, and in fact in most instances,**but it is very difficult to reproduce the exact conditions in this patch test that are present on the job.** Predisposing factors such as a longstanding fungus infectiion of the feet may sensitize the individual to more things than just the fungus and/or its products. The patient may be of the greasy oily seborrheoic type; if so he would be more likely to have dermatitis than an individual with normal skin would be.

In the protection of the workman from getting a dermatitis, adequate bathing facilities should be supplied on the job or as near it as possible if substances are used that produce a hazard. If the hazard is great enough, protective clothing should be provided by the owner and should be kept in good enough state of repair to protect the wearer as much as possible. The parts of the body that can not be protected by gloves and impervious clothing should be protected by some of the protective creams or lotions. And at present there is no one certain cream that will protect against all types of substances. For instance, a fat solvent would remove a greasy cream or lotion. Some of these preparations are advertised as invisible gloves, and so forth, but that is of very little importance except to the more fastidious. The main thing is to get something that will keep the offending substance away from the epidermis. Another point is that these protective preparations have to be removed either with soap and water or with some form of detergent which is capable of removing the paste or lotion with as little irritation as possible. And, of course, it goes without saying that the protective preparation must not be an irritant or a likely sensitizer itself. But whether it is greasy or oily, or dry, visible or invisible, it rubs off and has to be reapplied. Any of you who have tried to bathe or fish with some preparation on your arms, legs, and face, know full well that it protects you from sunburn only as long as it stays on the skin, and sometimes that isn't long enough.

There is definite evidence to show that a number of workmen go through what is known as a hardening period, and that for the first few weeks or months that they develop a mild dermatitis. These people should be encouraged to keep on working, but should be given as much protection as possible, and cared for as carefully as is possible with the hope that they will become hardened to the substance. And right at this point some of the men who have spent a great deal of time in this work disagree as to whether anyone ever loses his sensitivity by following this procedure. One school feels that only the ones who are suffering from a primary irritant get hardened, and that the ones who are truly sensitive do not harden and do not get an immunity.

The treatment should be aimed at removing the offending substance, and the application of mild non-sensitizing medicaments. None of the sensitizers such as sulfathiazole ointments should be used. There are many more besides the sulfonamides. Some of them are proprietary preparations and bear certain trade names. The injection of certain de-sensitizing drugs such as the thiosulphates, or the intracutaneous injection of certain other alleged desensitizing agents do no good. The greater number, by far, of all occupational dermatoses are caused by primary irritants. For the few who are truly sensitive it may prove beneficial to attempt to desensitize them.

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DISCUSSION

DR. R. T. MCLAURIN (Laurel)—I want to congratulate Dr. Thompson on this splendid paper that he has brought before the Association. I doubt if all of us are aware just how important the subject of industrial medicine is to us at this time and how in the future all of us will be connected in one way or another in handling industrial cases.

As industry develops more in the South we are going to see many more types of industrial diseases due to the fact that our workmen will be constantly working with all types of new chemicals and industrial working conditions. These diseases will not be necessarily limited to the skin. Those of us who have been doing industrial work for the past few years have already had the opportunity to deal with various types of industrial diseases of which the skin is the most common type seen. As a general rule the family physicians are usually consulted first and many times these cases are treated successfully. It is only those cases that fail to respond to treatment that are seen by the specialist and industrial physician. Then the question arises as to whether or not this disease is occupational or non-occupational.

The cause of occupational diseases as Dr. Thompson explained are numerous and it is very difficult at times to determine what might be the causative agent.

In considering the causes of occupational diseases, it is of great importance to keep in mind that an industrial exposure is not necessarily an occupational disease hazard. The amount, kind and length of exposure are very often, and in most instances, the determining factors. Nor does it necessarily follow as a certain event that disease will be produced because an actual occupational disease hazard exists.

The following classification is submitted to clarify our ideas regarding the different kinds of agents which may act as potential factors in the production of the various occupational diseases: thermal, electrical, chemical, bacterial and parasitic, atmospheric and radioactive substances.

It must be remembered that the above groups overlap somewhat but nevertheless I believe all occupational diseases could be caused by any one or combination of the above.

The difficult burden placed upon the physician is to differentiate between occupational and non-occupational diseases, and this can be done by trained medical men.

It has been my policy in the past whenever dealing with patients that might have occupational dermatitis or diseases to refer these cases to a dermatologist or a specialist. There is still considerable study to be made and I agree with Dr. Thompson it is not always easy to differentiate between occupational and non-occupational diseases.

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DR. PRESTON S. HERRING (Vicksburg)—In this age in which chemical engineering, synthetic preparations and alloys play such an important part there is no line of activity in which industrial dermatoses are apt not to occur. I can recall when most of us brushed off all skin conditions by prescribing a salve and if they did not get well they usually wound up in some city to see a dermatologist. But as indicated above so much of modern practice is going to be concerned with the organ, namely the skin, which first comes in contact with our environment that we are no longer going to be able to pass the buck As indicated by the essayists, there are certain men who have done noble work in investigating this subject and laying the ground work for a firmer foundation so that the rest of us will be more able to combat successfully the problems of occupation. Doctor Lewis Schwartz, of the U. S. Public Health Service, has been a great leader in this field.

I think perhaps that allergic contact dermatitis is the type of occupational dermatosis that frequently baffles us most, and perhaps it is the one that is least understood. Now, the common explanation for this condition is about as follows: The offending substance comes in contact with the skin when the fellow first goes to work and after a period known as the incubation period, upon further contact with the offender, the trouble begins. People with thin layers of epithelium are more apt to be affected than those with thick skins. People with broken skins or skin that has been devitalized by the use of strong soaps or solvents which remove the oil from the skin are more apt to suffer. As a result of this, the primary sensitizing dose, fixed antibodies in various areas of the skin become situated and the succeeding doses of the allergen cause tissue reactions that are manifested by an acute weeping vesicular type of dermatitis. If the rash is very mild, it is generally agreed that it is best for the worker to continue in his occupation, protecting himself as much as possible, and he will gradually build up an immunity to the offender. If he should be taken out of work for a considerable period of time, he very probably would have the whole course to go over again. If the dermatitis is very acute and extensive I think that they do best in bed out of contact with all irritants and soaps.

My regimen is to use a one to twenty dilution of Burow's solution as a continuous soak to these areas until the acuteness is gone and then use a protective ointment of plain Lassar's paste with or without camphor and menthol in it. I think unquestionably some cases are helped by benadryl or pyrienzamine. In addition, I employ ascorbic acid

250 mg. three times a day as an acid diuretic, and large doses of vitamin A. While I am not entirely satisfied with this line of therapy, it is about as good as any other that I have employed. I particularly want to warn about the use of sulfonamide or penicillin locally. Some of the worst and most complicated cases of dermatitis that I have seen have been as a result of the use of these drugs locally on a skin that already had a bigger load than it could carry. As a matter of fact, you will get into less trouble by limiting yourself to few and uncomplicated formulae. It goes without saying that soap should be left off the skin. In places where washing must be done, acidolate seems to be much less irritating than the finest of soaps.

I extend my congratulations and thanks to Doctor Thompson for his excellent paper on a difficult subject.

Amebic Hepatitis and Abscess*

R. C. FEEMSTER, JR.
Tupelo, Miss.

IN ATTEMPTING TO give a paper on this subject, I do so not with the idea of offering anything new in diagnosis and treatment but rather to reëmphasize these principles and to bring before our society the fact that amebic abscess is not a rare disease in our section. In this short paper I will not attempt to go into details as to the history, pathology, or even diagnosis and treatment. If interested a very thorough review of this subject can be found in an article "Amebic Hepatitis and Hepatic Abscess," by Drs. Ochsner and DeBaky appearing in the *Journal of Surgery,* March and April, 1943.

According to Ochsner and DeBaky four to five per cent of all individuals with intestinal amebiasis develop hepatic complications. Amebiasis is now recognized as being prevalent all over the world. It is not a tropical disease alone. Meleny, Bishop and Leathers found it present in 11.4 per cent of 20,237 individuals examined in Tennessee. Craig found it present in 12.7 per cent of medical officers in an examination of 189 officers. Numerous investigations show it to be present in from six to twenty per cent of the population. Faust in the *Journal of Tropical Medicine,* 1942, feels like 15 per cent to 20 per cent of the population of the United States has the Endameba histolytica in the intestinal tract. This would mean then about one million of our population might expect hepatic complications from amebiasis. This all sounds as if amebiasis is being over-emphasized. It does to me. I still can't believe that one to two individuals out of every ten have amebae in their intestinal tract and yet it would explain the seven hepatic complications we have seen in little over a year due to amebic infection.

Amebiasis and its complicating liver disease occurs very largely in males. Manson-Bahrr's recent report showed 84 per cent of cases were in the male. Amebic abscess in a series of cases collected from the literature showed 95.1 per cent were males. In Ochsner and DeBaky's report on 181 cases 86.7 per cent were males. In our seven cases six were males or 86 per cent. There has been no satisfactory explanation of the preference of the ameba for the male.

Liver complications of amebiasis occur principally during adult active life. In Ochsner's and DeBaky's series of 181 cases the youngest was six years of age and the oldest 70. Over 60 per cent of the cases were between 30 and 50 years. Our cases were 27 to 69 years of age with five being between 27 and 40, and two cases were 65 and 69 years of age.

The onset of amebic abscess may be acute or very insidious. It may develop immediately after an episode of acute intestinal amebiasis or as reported by some writers as long as twenty or thirty years after any dysentery symptoms. Or in a good percentage there can be obtained no history of intestinal amebiasis. This was true in 40 per cent of Ochsner's and DeBaky's 181 cases.

Symptoms may be divided into general systemic and local symptoms. Fever is the most constant systemic symptom. Then in order of frequency others found are weakness, loss of weight, anorexia, diarrhea, chills and profuse sweats, nausea and vomiting, and jaundice. These systemic symptoms vary greatly in different cases depending on the acuteness of the disease, the extent of liver involvement and the development of secondary infection. Fever is usually of moderate degree. When there is marked septic type fever with sweats the possibility of secondary infection must be thought of very strongly. These few cases with no fever are always very chronic in type. All of our cases had fever.

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*Read before the Northeast Mississippi Medical Society.

The earliest and most constant local symptom is pain and soreness in the region of the liver. This also varies according to the acuteness of the disease but is present in 80 to 100 per cent of cases reported by different writers. It was present in all of our cases. Referred pain to the shoulder is present in 10 per cent to 40 per cent of the cases reported. Enlargement of the liver is the next most common local finding and can be demonstrated by percussion and palpation in 75 per cent of cases. Frequently tenderness and even muscle rigidity in the upper right quadrant is present in the acute case and rarely there may be edema and redness of the skin where the infection has extended into the abdominal wall. Pain on breathing with cough, pleurisy and either signs of fluid or consolidation in the right lower chest are quite often present. In four of our seven cases symptoms of involvement of the right chest were present.

Laboratory findings are helpful in examination of stools and blood. Most writers vary greatly in the report of stool examinations in amebic abscess, varying from 4.4 per cent positive of Manson-Bahrr to 77.7 per cent of cases reported by Tao. In Ochsner's and DeBaky's series of cases reported the stool was found positive in 36 per cent. Positive stools were found in two of our seven cases and both of these were very early involvement of the liver. The blood picture usually shows a moderate leucocytosis, average about 16,000 WBC with polymorphonuclears not increasing in proportion to the total leucocytes. The count is usually always higher in the acute cases and tends to be lower in the chronic cases. Rogers says that high leucocytosis indicates probably multiple abscesses and a graver prognosis. And a very high leucocytosis indicates the probability of secondary infection. The eosinophiles are not usually increased. Secondary anemia is almost always present and is more marked in the chronic cases.

X-ray is most important in the diagnosis of amebic abscess. The characteristic elevation and immobility of the diaphragm has been emphasized by numerous writers. Flouroscopy and A.P. and lateral films of the chest and diaphragm will make the diagnosis in 70 per cent to 100 per cent of the cases reported by writers. Ochsner and DeBaky report in their series of cases a positive diagnosis by x-ray of 88 per cent of their cases. Any patient then, especially a male, who has pain and soreness in the region of the liver with fever, possibly loss of weight and weakness and possibly sweats and who has a moderate leucocytosis, should have a thorough x-ray investigation of his diaphragm. If the x-ray findings are positive this patient should be considered to have an amebic abscess even if there is no history of dysentery or repeated stools are negative for the ameba, and he should be started on conservative treatment. This is very important because so many of these cases will respond purely to the amebicides if recognized early. The definite proof of your diagnosis however, even in a very typical case, would depend upon demonstrating the typical chocolate sauce pus from the abscess cavity. This can be done quite often by aspiration which we will mention in the treatment.

The treatment of amebic abscess is tending again to be more conservative. It is recognized now generally that early recognition of amebic hepatitis and early abscess will usually respond completely to emetine therapy alone. Repeating what we have said before then, it is very important to recognize this disease early due to the fact that it will be controlled so easily by specific therapy. Three of our cases responded to emetine alone and Case One of our case reports will demonstrate this.

Then there is treatment by specific therapy with aspiration. A number of abscesses, especially where they are quite large, will have to be aspirated. It is very important in these cases however that emetine be given for several days before attempted aspiration. Ochsner and DeBaky report that they try always to give emetine three or four days before any attempt at aspiration. In their series of cases eighty-three were treated conservatively with emetine and aspiration or emetine alone with a loss of only three cases. Two of these were aspirated without preliminary emetine therapy. To aspirate an amebic abscess may be very simple if the abscess is very large and apparently pointing under the skin. The largest majority of abscesses of course involve the dome of the right lobe of the liver. The point of aspiration will always depend a great deal on your x-ray findings where there are no localizing signs and pointing of the abscess.

If the lateral x-ray shows the abscess in the anterior portion of the liver it should be aspirated by inserting the needle just beneath the costal margin anteriorly two to three inches lateral to the midline. If the lateral x-ray showed it pointing and located in the posterior part of the liver the needle should be inserted just below the costophrenic angle and directed up and interiorly. The most common site, though, in the dome of the liver is usually reached by inserting the needle through the ninth or tenth intercostal space in the anterior axillary line and directing the needle up, medially and slightly posteriorly.

The dangers of aspiration are the possibility of hemorrhage and secondly the spreading of the infection. There have been reported cases of extensive hemorrhage although Ochsner and DeBaky have no serious hemorrhage in their series of cases. Rogers and others have stressed the importance of preliminary emetine therapy in minimizing the danger of hemorrhage by decreasing the hepatitis around the abscess cavity. The spreading of infection in aspirating an amebic abscess is very important and that is why it is important to pick the site of aspiration carefully, so as not to contaminate the pleural or peritoneal cavities if possible. Again it is very important for emetine therapy before aspiration. Also some of these amebic abscesses may already be secondarily infected and a spread of this pyogenic infection to the peritoneal cavity or pleura could be fatal to the patient.

The only radical treatment advised by most writers now is the surgical drainage of the secondarily infected amebic abscess. Ochsner and DeBaky feel that when an amebic abscess is aspirated and found secondarily infected immediate surgical drainage should be done. The usual organism found is staphylococcus or streptococcus—secondary infection is readily and quickly confirmed by the purulent nature of the fluid aspirated and direct smear and staining of the pus. Alfort and Ghalionqui report treating two cases with aspiration and sulfonamides. Ochsner's and DeBaky's report was in March, 1943. I feel that with the addition of penicillin as well as the sulfonamides most of these cases where secondarily infected will clear up promptly on conservative treatment where they can be aspirated. If surgical drainage is done, of course the fact of primary importance is to try to keep from spreading the infection to the pleural or peritoneal cavities. Therefore, the drainage should be done extraserously without opening the peritoneal or pleural cavities. This can be done in an anterior abscess by the technic of Clairmont and Meyer or in a posterior abscess by the technic as described by Ochsner for drainage of subphrenic abscess.

A word about the specific therapy for ameba. All liver cases should have emetine. We know that emetine is a toxic drug and must be given carefully. The chief danger is degenerative changes in muscle, especially the heart muscle. Indications of toxicity are diarrhea, nausea and vomiting, prostration, cardiac arrhythmia or failure, muscular pains and weakness especially in the extremities. Most writers advise emetine one grain daily for from six to twelve days—certainly no longer than twelve days and some advise a rest period of a few days in the régime. After two to three weeks emetine may be repeated probably one grain for six days.

Just as the other amebicides (carbarsone, diodoquin, anayodin, etc.) do not affect the liver infection (and they are also toxic to the liver), emetine does not clear up the intestinal amebic infection. After the liver infection is controlled all amebic abscess cases should have ample and thorough treatment of the intestinal amebic infection with carbarsone, diodoquin, etc. This is very important as recurrent liver infection is entirely possible.

Our seven cases consist of three early cases of hepatic involvement, all of which cleared up promptly with specific therapy alone; two cases with specific therapy with aspiration; one case of pleuropulmonary involvement who cleared up with aspiration of chest with specific therapy; one case of perforation of a secondarily infected amebic abscess into the abdominal cavity with surgical exploration and drainage of the abscess cavity with specific therapy.

Case I. This represents three cases very similar that cleared up completely on specific treatment alone. Male, 27 years of age admitted to hospital 4/20/46. C.C.: Pain and soreness in upper right part of abdomen.

P.I.: Onset about six weeks previously when thought he began running fever. Pain and soreness in right upper abdomen gradually became more severe. Tight and swollen in this area. Loss of appetite for past week. Cough for past week—now productive.

P.H.: Treated in 1943 for amebic dysentery.

Had loose stools with blood then over a period of a year off and on.

Physical findings negative save for tenderness over right upper quadrant. Liver enlarged with edge three fingers breadth below costal margin.

Laboratory findings: HBG 76.2 per cent, RBC 3,810,000, polys, 83 per cent, lymph 17. Repeated stools were negative. X-ray studies revealed raised diaphragm on right and suggested enlarged liver.

Despite negative stools at present with pain and soreness over the liver, enlarged liver, fever running about 101° every day, moderate leucocytosis and mild anemia and suggestive positive x-ray findings and history of amebiasis three years before, this patient was thought to have early amebic abscess and started on emetine therapy. After two days had no more fever, soreness or any symptoms. Cleared up so quickly and completely that aspiration was not attempted. Later was given treatment with carbarsone and diodoquin and one grain emetine daily for six days.

Case II. This represents two cases that we have had which required aspiration with specific treatment. A male thirty years of age was admitted to hospital on 1/25/47.

C.C.: Swelling of abdomen with pain in upper abdomen, shortness of breath. Patient had been having pain in upper abdomen for almost a year, more severe at times. Had low grade fever most of time. Swelling in abdomen gradually grown worse with loss of weight, loss of appetite, and recently vomiting. Stools had been loose off and on but with no blood. Shortness of breath and cough progressively growing worse.

P.E.: When first seen by us this patient looked quite sick. Pale, temperature 100°. Had very large mass in upper abdomen extending down below the umbilicus and extending out with a curved contour. This mass was definitely fluctuant.

Laboratory: Repeated stools were negative. **Blood Work**: 1/10/47—HBG 45 %, RBC 2,450,000, WBC 13,800 with 73 neutrophiles. Kahn negative. Blood chemistry normal. X-ray revealed marked elevation of diaphragm right, with some changes in right lung fields.

Clinical Course: Patient was started on emetine one grain daily. Amebic abscess was aspirated twice getting 1200 cc. of fluid that looked dark like prune-juice on 1/13/47 and 1700 cc. three days later. Symptoms cleared up completely in few days. Was given two transfusions and when discharged on 1/25/47 did not look or feel like the same person. He had emetine one grain daily for twelve days and one month later for six days. Also had after going home treatment with carbarsone and diodoquin. When seen recently had had no return of symptoms.

Case III—Male 65 years of age, admitted to hospital May 31, 1947 and discharged June 14, 1947. This case represents one of pleuro-pulmonary involvement secondary to liver abscess. Treated by aspiration of chest and specific therapy.

C.C.: Pain in right side of chest and upper abdomen with cough, fever.

P.I.: Onset five weeks before admission with what was thought to be influenza. Cough, fever and pain in right lower chest. Patient continued to be sick, getting weaker. Ran temperature 102 to 103° every day. Loss of appetite and weight with some nausea but no vomiting. Bowels normal.

P.H.: No history of any real dysentery or blood in stools. General health good.

P.E.: Temperature when seen 103°. Acutely ill. Tender in right upper abdomen and liver edge two fingers' breadth below costal margin, dullness in right chest extending up to fourth rib in mid-axillary line. Suppression of breath sounds with loss of tactile and vocal fremitus in right base.

Laboratory: Repeated stools negative for ameba.

Blood: HBG 90%, RBC 4,600,000, WBC 12,400 with 84 polynuclears. Kahn negative. 6/3/47 and 6/7/47 fluid from chest showed many active amebae.

Clinical Course: Patient was given one grain of emetine daily for twelve days. Right pleural cavity aspirated on the third, seventh, and eleventh of June with 500, 800 and 250 cc. of fluid being removed. Steady improvement, temperature subsiding slowly and requiring about one week to return to normal. Has had carbarsone at home and is on emetine one grain daily for six days now.

Case IV—This case represents amebic abscess with secondary infection and rupture spontaneous of liver abscess with peritonitis. It also represents a missed diagnosis. Male, age 69, admitted to hospital 3/21/47 and discharged 4/20/47.

C.C.: Fever, rigors, loss of appetite and constipation.

P.I.: I saw this patient in the office after he had been sick for one week. Had temperature then of 103°. Fever each day with rigors and sweats. No appetite at all, just couldn't eat. No pain anywhere. Had had trouble getting bowels to move since onset of illness. Marked weakness.

P.H.: No history of any dysentery or blood in stools. Had always been in very good health.

P.E.: Essentially negative when first seen.

Laboratory: Stool negative for ameba later when in hospital.

Blood: HBG 84%, RBC 4,800,000, WBC 18,000. Differential 89%, polymorphonuclears. 3/28/47—Icterus index 28 units. Kahn negative. Blood cultures negative.

X-ray not helpful due to patient being quite sick, and very thick chest and abdomen.

Clinical Course: Patient entered hospital one week after being first seen in the office. Continued to have rigors, sweats and septic high fever. Still no pain. One week after admission began complaining of pain in upper abdomen, which gradually increased. Became slightly icteric. We thought we were dealing with a septicemia and pyogenic liver abscess. He received heavy penicillin therapy from the onset and also streptomycine was tried with no results from either noted. Fortunately for some reason I started him on emetine. On 3/30/47 patient had sudden acute pain in upper abdomen and developed rigid abdomen. Exploratory laporotomy was done that day under spinal anesthesia. Small perforation of liver abscess in anterior part of liver was found just medial to gallbladder. About one pint of pus was evacuated and retention catheter placed in cavity. The drainage was purulent, not prune juice in character. Smear showed pus cells with few staphylococci. Course from then on very smooth, with another course of emetine one grain daily for six days and carbarsone and diodoquin.

PROGRAM
LIST OF SPEAKERS TO NOVEMBER 12, 1947

Internal Medicine—Dr. Louis A. M. Brause, Baltimore, Md.

Surgery—Dr. L. R. Dragstedt, Chicago, Ill.

Surgery—Dr. Frank H. Lahey, Boston, Mass.

Pediatrician—Dr. John A. Toomey, Cleveland, Ohio.

Allergy—Dr. Ralph Bowen, Houston, Texas.

Ophthalmology—Dr. Arthur J. Bedell.

Cardiology—Dr. Wm. D. Stroud, Philadelphia, Pa.

Internal Medicine—Dr. Samuel F. Haines, Rochester, Minn.

Internal Medicine—Dr. Robert W. Keeton, Chicago, Ill.

Orth. Surgery—Dr. Guy A. Caldwell, New Orleans, La.

Urology—Dr. Elmer Hess, Erie, Pa.

Surgery—Dr. Alton Ochsner, New Orleans, Louisiana.

Int. Medicine—Dr. Tate Miller, Dallas, Tex.

N. P.—Capt. George N. Raines, Bethseda, Md.

Surgery—Dr. V. S. Counsellor, Rochester, Minn.

Obstetrics—Dr. M. E. Davis, Chicago, Ill.

Obstetrics—Dr. N. J. Eastman, Baltimore, Md.

Pathology—Dr. M. C. Winternitz, New Haven, Conn.

EN&T—Dr. Paul H. Holinger, Chicago, Ill.

Surgery—Dr. Fred W. Rankin, Lexington, Kentucky.

The Mississippi Doctor

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Address all material for publication to W. H Anderson, M.D., Booneville, Mississippi.

Editorials

The meeting of Mid-South Postgraduate Medical Assembly is just around the corner. It bids fair to being one of the very best. The fine list of exhibitors is a good index to what we may expect. The exhibitors love the Mid-South as do the rank and file of doctors in this area. Make your plans now to attend this meeting in February.

At the last meeting of the Northeast Mississippi Medical Society which was held on the University campus a resolution was passed commending our United States senators and representatives for their stand for democratic medicine as against state medicine. They have taken a solid stand all the way through for the medical profession, uncomprisingly opposed to breaking the doctor-patient relation. We commend this society for expressing its appreciation publicly, and feel sure that the expression is the feeling of all doctors in the state.

It is good human economy for all the people everywhere to have the best medical service known. State medicine will carry this service backward rather than forward. Deterioration follows regimentation, as has been demonstrated in other nations. Our state is doing something to ward off political medicine. The system of hospitals we have under way, with the Blue Cross Insurance Plan, the per capita distribution of funds for the indigent sick which we have had in operation for some time, and a four-year medical school, constitute the heart and soul of free medicine. Furnishing a consultation system along with an affiliated plan of training nurses and interns, will also serve as a great bulwark against state medicine.

When it comes to state and national legislation and to practical means of carrying medical service to all the people, Mississippi may be looked to as the leader.

I have been practicing medicine for almost sixty years and have always tried to give the interest of my patient first place in my consideration. Naturally I have formed some opinions of my own and have drawn conclusions for myself.

Barbiturates are dispensed under a long list of trade names. I have used many of these, and my conclusions are based on my observation of many patients while taking these drugs. I am convinced there are many more ill than good effects from their use. However, there are times and conditions that may justify the use of them provided only a few doses are administered to one patient. Even then I believe the patient or friends should be fully informed that there is great danger of habit formation. And the prescription should always be marked "do not refill." Mental deterioration certainly follows continued use of these drugs. Our mad-houses are being filled to overflowing because of the widespread use of these drugs. I am convinced that most of the heinous crimes that are being committed by young people are committed while under their influence or because of permanent mental derangement resulting from continued use of them. It may be that when "a faithful and loving" wife decides to eliminate friend hubby, investigation will show that she is an addict to the barbiturate drugs. It is alarming to consider the frequency of this addiction among women of the upper social strata. The trying incidents of home life plus the strain of modern society accounts for this frequency. Under no condition should a doctor prescribe one of these drugs for a woman who comes to him seeking relief from the effects of the load of overstraining duties of the housewife and socialite. Again I insist that no doctor has the moral right to administer one of these drugs to any patient, even in diminutive doses, where it is likely to be required for more than a very few days. Some substitute must be found in these cases. I do not suggest what this substitute shall be, there are many that are less hazardous. I recall a recent conversation with an attorney of unusually high standing. He said that the most horrible experiences came when very able physicians were trying to sedate his heart with phenobarbital following a coronary thrombosis. Had this drug been long continued, it is horrible to think of the results. Again I am thinking of a most brilliant young physician who broke under the strain of professional work and duties. He resorted to the use of these drugs to obtain sleep and rest. He fell a victim to the addiction and after a considerable lapse of time, death came as a happy release from this slavery. —G.S.B.

News and Comment

PRESIDES AT SMA

Dr. E. L. Henderson will preside this month at the Southern Medical Association meeting in Baltimore. He is a native son of Kentucky and has been an outstanding leader in organized medicine for many years. He is a past-president of the Southeastern Surgical Congress, has served on the council of the Southern Medical, as president of his state association, is a member of the American College of Surgeons, and has held many other outstanding honors at the hands of his fellow doctors. He is a diplomat by nature, is an able medical statesman, and by profession a very outstanding general surgeon. He has executive ability as a presiding officer and knows all the ways when it comes to putting on a fine medical meeting. Under his direction and that of the able secretary-manager, Mr. C. P. Loranz, the Baltimore meeting will be superior.

DR. ELMER LEE HENDERSON

Dr. Elmer Lee Henderson of Louisville, Kentucky, President of the Southern Medical Association which meets in Baltimore, November 24, 25, and 26.

FROM G. S. B.

To All My Friends Who Read This
Issue of the Journal:

I have been both mentally and physically ill for more than two and one-half years. During this time many kindnesses have been bestowed by many people—more than I had expected or deserved. Especially have my doctor friends and their wives been most considerate. During a long life spent in the study and practice of medicine, I have reached the conclusion that the administration of drugs is of comparatively little value to the sick. But psychotherapy, though unwittingly resorted to by doctors and nurses, is of great value to the ill. I verily believe that but for the kind letters and visits from my friends

I should have been dead long before now. When I plead with my doctor friends to visit me I am in a sense pleading for my life. I experience a sense of betterment on each occasion when some kind friend takes time out from his pay patients to come or write. You may not understand (I do not understand, but I know) how this can be true. So I am making this earnest and public appeal to my friends to continue to contribute their part in my expensive treatment. May heaven's blessings come to you as your reward.

Your friend with gratitude and love,
G. S. Bryan
Amory, Miss.

SOUTHEASTERN SURGICAL CONGRESS

The sixteenth annual assembly of the Southeastern Surgical Congress will be held in Hollywood, Florida, Hollywood Beach Hotel, April 5, 6, 7, 8, 1948. The following is a partial list of the men who will appear on the program:

Dr. E. G. Ramsdell, White Plains, N. Y.; Dr. Willoughby Kittredge, New Orleans, La.; Dr. Walter Stuck, San Antonio, Texas; Dr. Edward Jelks, Jacksonville, Fla.; Dr. Henry K. Ransom, Ann Arbor, Mich.; Dr. Ambrose Storck, New Orleans, La.; Dr. Walter Jones. Miami, Fla.; Dr. Samuel F. Marshall, Boston, Mass.; Dr. Frederick Boyce, New Orleans, La.; Dr. Martin Nordland, Minneapolis, Minn.; Dr. George H. Martin, Vicksburg, Miss.; Dr. Charles Mayo, Rochester, Minn.; Dr. J. Harvey Johnston, Jr., Jackson, Miss.; Dr. George Curtis, Cleveland, Ohio; Dr. Herbert Acuff, Knoxville, Tenn.; Dr. Carl Moyer, Dallas, Texas; Dr. R. L. Sanders, Memphis, Tenn.; Dr. Claude J. Hunt, Kansas City, Mo.; Dr. Charles C. Trabue, Nashville, Tenn.; Dr. Herman Kretschmer, Chicago, Ill.; Dr. Julian Rawls, Norfolk, Va.; Dr. L. J. Gariepy, Detroit, Michigan; Dr. William L. Sibley, Roanoke, Va.; Dr. Rudolph Jaeger, Philadelphia, Pa.: Dr. Julian A. Moore, Asheville, N. C.; Dr. Harry Bacon, Philadelphia, Pa.; Dr. James F. Robertson, Wilmington, N. C.; Dr. Ira Lockwood, Kansas City, Mo.; Dr. R. A. Ross, Durham, N. C.; Dr. H. G. Smithy, Charleston, S. C.; Dr. L. W. Dowlen, Miami, Fla.; Dr. David A. Wilson, Greenville, S. C.; Dr. L. M. Orr, Orlando, Fla.; Dr. A. F. Burnside, Columbia, S. C.; Dr. J. G. Lyerly, Jacksonville, Fla.; Dr. Lester A. Brown, Atlanta, Ga.; Dr. Gilbert E. Fisher, Birmingham, Ala.; Dr. John M. Wilson, Mobile, Ala.; Dr. Robert C. Major, Augusta, Ga.; Dr. M. Y. Dabney, Birmingham, Ala.; Dr. Fred Rankin, Lexington, Ky.; Dr. Arnold Griswold, Louisville, Ky.; Dr. Dargan Smith, Owensboro, Ky.; Dr. J. W. Devine, Jr., Lynchburg, Va.

ANNOUNCEMENT

The Cotten Clinic desires to announce to the medical profession the association of Dr. Verner S. Holmes, practice limited to eye-ear-nose-throat-allergy, with Dr. Willis F. Cotten, North Front Street, McComb, Mississippi.

TO HAVE EXHIBITS AT THE MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
Ames Company, Inc., Elkhart, Indiana
Bilhuber-Knoll Corporation, Orange, N. J.
The Borden Company, New York, N. Y.
Burroughs Wellcome & Co., (U.S.A.) Inc., New York, N. Y.
Carnation Company, Milwaukee, Wisconsin
G. W. Carnrick Company, Newark, N. J.
Davis & Geck, Inc., Brooklyn, New York
The Dick X-Ray Company, Memphis, Tenn.
H. G. Fischer & Company, Chicago, Illinois
General Electric X-Ray Corporation, Memphis, Tenn.
Gerber Products Company, Fremont, Mich.
Kay Surgical, Inc., Memphis, Tenn.
H. W. Kinney and Sons, Inc., Columbus, Indiana.
Lederle Laboratories Division American Cyanamid Company, New York, N. Y.
Eli Lilly and Company, Indianapolis, Indiana
J. B. Lippincott Company, Philadelphia, Pa.
J. A. Majors Company, New Orleans, La.
Mead Johnson & Company, Evansville, Ind.
Mellin's Food Company, Boston, Mass.
The Mennen Company, Newark, N. J.
E. L. Mercere, Inc., Memphis, Tenn.
Merck & Co., Inc., Rahway, New Jersey
The Wm. S. Merrell Company, Cincinnati, O.
Mid-South Oxygen Company, Memphis, Tenn.
Philip Morris & Co., Ltd., Inc., New York, N. Y.
C. V. Mosby Company, St. Louis, Missouri
Ortho Pharmaceutical Corp., Raritan, N. J.
Parke, Davis and Company, Detroit, Mich.
Pet Milk Sales Corporation, St. Louis, Mo.
Puritan Compressed Gas Corporation, Kansas City, Missouri
Richards Manufacturing Co., Memphis, Tenn.
Schering Corporation, Bloomfield, N. J.

G. D. Searle & Company, Chicago, Illinois

Smith, Kline & French Laboratories, Philadelphia, Pa.

Southern Surgical Supply Company, Memphis, Tenn.

Union Hospital Supply Co., Memphis, Tenn.

U. S. Vitamin Corporation, New York, N. Y.

White Laboratories, Inc., Newark, N. J.

POSTGRADUATE ASSEMBLY

The Fulton County Medical Society announces a three-day postgraduate assembly to be held in Atlanta January 28, 29 and 30, 1948, immediately following the regional meeting of the College of Surgeons. Because of the College of Surgeons meeting, surgical subjects will not be emphasized in this assembly. The program has been arranged to help the average doctor keep abreast of the newer developments, but it is believed it will offer something of value to every man and woman practicing medicine in the Southeast.

The College of Surgeons invites all physicians in this region to their meeting, the expense of which will be met by the College. The postgraduate assembly will have to require a registration fee.

The list of speakers is the best assurance of the excellence of the Assembly: Dr. Lester Dragstedt, Professor of Surgery, University of Chicago; Dr. Charles S. Keefer, Professor of Medicine, Boston University; Dr. A. C. Ivy, Professor of Medicine, Northwestern University; Dr. Helen Taussig, Johns Hopkins University; Dr. Julius Lempert, New York City; Dr. Philip S. Hench, Mayo Clinic; Dr. E. von Hamm, Professor of Pathology, University of Ohio; Dr. Ralph M. Tovell, Hartford, Conn.; Dr. Robert Elman, Washington University, St. Louis; Dr. Tom D. Spies, Professor-Elect of Medicine, Northwestern University; Dr. Merroll C. Sosman, Clinical Professor of Roentgenology, Harvard Medical School.

SUGGESTED SAVINGS FOR PHYSICIANS

(For table see page 226)

This Savings Program offers many possibilities and guarantees:

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Detailed information may be obtained from the U. S. Savings Bonds Division, Box 747, Jackson, Mississippi.

UPJOHN OPENS CHICAGO BRANCH

On January 1, 1948, The Upjohn Company, Kalamazoo, Michigan, manufacturers of pharmaceuticals since 1886, will open a new branch office and warehouse at 1001 East 87th Street, Chicago, Illinois.

PUBLIC HEALTH IN THE NEWS

Public health work has been on the move, we all know, but it has made the news in two special lay promotions recently.

In the September 25 and October 5 issues of the Jackson **Daily News** Anabel Power reviewed the work of the Mississippi State Board of Health from its establishment in 1877 through seventy years of achievement. With due acknowledgment for assistance from Dr. Felix J. Underwood and Dr. R. N. Whitfield, she introduced such names as H. A. Gant, John F. Hunter, Harley R. Shands and W. S. Leathers, great pioneers and organizers in laying the foundation for probably the most phenomenal accomplishments in the public health field of any state in the union. The list is long and impressive. It is a history that reflects credit to the medical profession and the progressive spirit of men with vision in our state. Although the present secretary, Dr. Felix J. Underwood, says of his predecessor, Dr. W. S. Leathers, who in his seven-year tenure became the "guiding genius who brought the health work of the state from obscurity to the point where it attracted attention both at home and abroad, and his early work laid the foundation of the state's present public health program," it is due to Dr. Underwood's administrative ability and vision of service that the methods and success of the past twenty-three years command the attention of forward-thinking health minds all over the world.

The two articles represent volumes of actual progress made by the Mississippi State Board of Health.

Almost simultaneously, on October 5, Dr. F. Michael Smith's home-town paper, the

Vicksburg **Post-Herald**, dedicated two full pages to reviewing the work done by the Warren County Health Department over two decades. Since its establishment Dr. Smith has guided the department, which can truly be said to be the lengthened shadow of its director. This unit has attracted national attention, having developed and turned to noble account methods which have pulled Mississippi to the top in public health testimonials.

A veteran in his field, Dr. Smith served as third president of the Mississippi Public Health Association, back then having set in motion his ideas of the importance of the community health in reaching goals of happiness, usefulness, and more abundant living. With an efficient staff as the backbone of the program, he has been able to cite amazing results through cooperating public school instruction, civic and church organizations, and the medical profession. Maternal, prenatal and infant care, tuberculosis surveys, dental campaigns, venereal disease control programs, and community food, milk, and water sanitation supervision are the major divisions from which outstanding records have come to prove the tremendous role played by the unit down its twenty milestones.

Warren County has not only been in the lead, it has furnished the impetus and inspiration to counties over the state to join the upward march of public health in Mississippi.

ASC INITIATES

The following initiates from Mississippi were accepted into fellowship at the thirty-third convocation of the American College of Surgeons held in New York on September 12: Arthur E. Brown, Columbus; John L. Davis, Jackson; George H. Martin, Vicksburg; Joseph G. McKinnon, Vicksburg; Joseph M. Moore, Vicksburg; Hillrie K. Rouse, Jr., Gulfport; George E. Twente, Jackson; Frank A. Wood, Jackson.

TUMOR CLINIC

The tumor clinic of the Duval County Hospital, Jacksonville, Florida, in conjunction with the American Cancer Society, Florida Division, and the Florida State Board of Health, has completed plans for the three-day symposium on cancer which is to be held at the Roosevelt Hotel in Jacksonville on November 12, 13 and 14, 1947.

The final roster of speakers is as follows:

1. Dr. Emil Novak, Department of Gynecology, Johns Hopkins Hospital, Baltimore, Maryland—Tumors of the Female Genital Tract.
2. Dr. Samuel Marshall, Department of Surgery, Lahey Clinic, Boston, Massachusetts—Tumors of the Gastro-intestinal Tract.
3. Dr. Archie DeDan, Chief, Urological Service, Memorial Hospital for the treatment of Cancer, New York City—Tumors of the Genito-urinary Tract.
4. Dr. Everett Sugarbaker, Sugarbaker Clinic, Jefferson City, Missouri—Tumors of the Breast and Lymphomas.
5. Dr. George T. Pack, Attending Surgeon in Charge of Mixed Tumor Service, Memorial Hospital for the Treatment of Cancer, New York City—Mixed Tumors.
6. Dr. James Elliot Scarborough, Director, Winship Clinic for Cancer, Emory University Hospital, Atlanta, Georgia—Tumors of the Head and Neck.
7. Dr. Herbert Adams, Department of Surgery, Lahey Clinic, Boston, Massachusetts—Tumors of the Chest.
8. Dr. R. R. Spencer, Cancer Research, Director, National Cancer Institute, Bethesda, Maryland.
9. Dr. Everett L. Bishop, Tumor Pathology, Chief Pathologist, Winship Clinic for Cancer, Department of Pathology, Emory University, Atlanta, Georgia.

Deaths

DR. W. J. ANDERSON

Dr. William Jackson Anderson, of Causeyville, 84, died at Anderson's Infirmary in Meridian Oct. 7. He is survived by his wife, Mrs. Alma Hayes Anderson; three daughters, Mesdames Gabe Carney, J. S. Harrington, Meridian, and W. Larkin Carter, Birmingham, Ala.; son, W. H. Anderson, Mobile, Ala.; eight grandchildren, William Harrington, Edwin Harrington, New Mexico; Neville Harrington, Clair Harrington, Mrs. Alma Jane Miller, Mrs. Milton Miller, Mrs. W. C. Brookshire, W. L. Carter, Jr.; several great-grandchildren.

Dr. Anderson was a member of the Lauderdale County Medical Society, chairman of the deacons and superintendent of the Sunday school at the Causeyville Baptist Church, director of the Red Cross, and trustee of East Mississippi Junior college at Scooba. He graduated from the University of Tennessee in 1889 and had post-graduate work at the Tulane University, New Orleans, La.

DR. J. R. JACKSON

On Thursday morning September 18 Dr. James Robert Jackson, one of the most promising young doctors in the Mississippi Delta, expired suddenly from angina pectoris following a short illness with which he was taken upon his return home from his office on Wednesday. Dr. Jackson was born at Ecru, on August 6, 1906, and when a very small boy his parents, Mr. and Mrs. James Walter Jackson, moved to Belzoni. Dr. Jackson's father died several years ago.

Dr. Jackson was a graduate of the University of Tennessee Medical School and interned at Indianapolis, Indiana. He came to Belzoni to practice in 1932.

In June 1935 he was married to Miss Ann Bagwell of Murphreesboro, Tennessee. Besides his mother, Mrs. Wray Jackson, he is survived by two children, James Robert Jackson, Jr., and Virginia Dianne Jackson of Daytona Beach, Florida.

Dr. Jackson was a devout member of the Methodist Church.

DR. W. C. HART

A genuine lament went up for Dr. W. C. Hart October 26 when death claimed him from Tylertown. Dr. Walter Chester Hart, despite recurrent illness during the past nine years, had maintained a wide practice with all classes of the community. He was a leader in civic interests and devoted much of his time and ability to the betterment of the community, where he had lived twenty-five years.

Dr. Hart, who was sixty-five years old, was the son of the late Mr. and Mrs. W. J. D. Hart, of Northfield, where he was born. He was a graduate of the University of Tennessee Medical School and took postgraduate course at Tulane.

He is survived by his wife, Avis Moore Hart, one son, Milton, of McComb, and three daughters, Mrs. W. T. May and Mrs. Charles Herbst, of Brookhaven, and Mrs. T. R. Mullins, of Sommerville, Tenn.

DR. ROBERT C. FINLAY

Services for Dr. Robert Conway Finlay of Glen Allan, died late October 16 at his home. Dr. Finlay was sixty-two years of age.

Dr. Finlay, who practiced medicine in the Delta for thirty-three years, had been in ill health for two months.

Born in New Orleans, where he received his education in the public schools, he was graduated from the medical school of Tulane University in New Orleans in 1912.

He came to the Delta in 1914 to begin his practice at Grace in Issaquena County. Four years later he moved to Hollandale, and in 1919 came to Greenviille.

He was associated with Gamble Brothers Clinic of Greenville for twelve years as a specialist in radiology until 1931, when he moved to Glen Allan to enter general practiice.

Dr.Finlay served a wide area in the Lake Washington community. Several years ago he was honored by the people of the community at a propram at Highland Club.

For a number of years he was secretary of the Delta Medical Society.

Dr. Finlay was a member of St. Johns Episcopal Church at Glen Allan, and served as church treasurer.

He leaves his wife, Mrs. Maude Biggs Finlay, and two sons, Robert C. Finlay Jr. and Edward C. Finlay, all of Glen Allan; two daughters, Miss Laura C. Finlay of Glen Allan and Mrs. Nell Finlay Gwinnup of Franklin, Ind. He also leaves a brother, Alexander K. Finlay of New Orleans, and two sisters, Mrs. James P. Butler of Natchez and Mrs. Esther Harvey of New Orleans.

Dr. R. L. HAGAMAN

Dr. R. L. Hagaman, prominent Raymond physician and member of the Baptist Hospital staff in Jackson, died October 15 after a long illness. He was eighty-one.

Dr. Hagaman was born at Jackson, La., and was graduated from Centenary College at Shreveport, La., and from Tulane. He had practiced at Raymond for thirty-two years. He was a member of the Raymond Presbyterian Church and the Central Mississippi Medical Association.

Dr. Hagaman leaves his wife; two sons, Lee Hagaman, officer in the Jackson State-National Bank, and Dr. Van Dyke Hagaman of Jackson, and a daughter, Mrs. M. Brister Ware of Jackson.

DR. A. G. HENDERSON

Dr. A. G. Henderson, Imboden, Ark., graduate of Missouri Medical College, St. Louis, Mo., in 1876, died at his home July 25 at the age of ninety-five.

Born in Rogersville, Tenn., Sept. 12, 1851, he was the father of organized medicine in his section of Arkansas. He organized the Randolph County Medical Society in 1877, the Lawrence County Medical Society in 1878, and assisted in the organization of Craighead County Medical Society in 1879. He was an honorary member of the Arkansas Medical Society for eighteen years.

DR. O. D. HOOKER

Dr. Otho Douglas Hooker, of Lexington, prominent Holmes County physician and businessman, died suddenly September 28 in the Baptist Memorial Hospital in Memphis.

Services were held September 30 at 2 o'clock at the residence. The Rev. A. Y. Brown, pastor of the First Methodist Church of Lexington officiated. Burial was in the Lexiington Cemetery with Southern Funeral home in charge of arrangements.

Son of the late Henry S. and Ella Beall Hooker, he was born in Lexington, October 28, 1888. He was graduated from Tulane University Medical College in 1912. For the past several years he was engaged in farming and other business enterprises. He was a steward and trustee in the Methodist Church for many years and a Mason.

He leaves his wife, Mrs. Kathleen Wilburn Hooker; a son, Wilbur H. Hooker; a daughter, Mrs. Kenna Ellis; a brother, Walter Hooker, all of Lexington; three sisters, Mrs. Lucille Fuqua, Mrs. Beall Small and Mrs. Hattie Witty of Winona and five grandchildren, Kathleen Ellis, Ken Ellis, Jr., Ed Wilburn Hooker Jr., Otho Hilliard Hooker and Wyche Hooker.

DR. C. D. ALEXANDER

Services for Dr. C. D. Alexander, prominent Carroll County physician who died at his home there October 17, were held at the residence the following afternoon.

Son of the late Capt and Mrs. Harry Beall Alexander, he served as a captain in the Medical Corps in World War I. He was praduated from the old Memphis Medical College in 1900 and practiced for forty-two years in Vaiden. He was a member of the Presbyterian Church. Dr. Alexander was seventy-three.

He leaves his wife, Mrs. Pearl B. Alexander; two daughters, Mrs. James A. Townes of Minter City, Miss., and Mrs. Maxwell E. Davis of Vaiden; a foster daughter, Mrs. Eugenia B. Lenpquist of Rockford, Ill.; a brother, U. L. Alexander, and two sisters, Mrs. Beall A. Brock and Miss Annie Alexander, all of West, Miss.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

SICKLE CELL ANEMIA IN WHITE PATIENTS WITH ULCERS OF THE ANKLES: Report of Two Cases. A. C. Woofter, William S. Dick and Walter L. Bierring, *Arch. Int. Med.* 76:230, (October) 1945.

Quoting authoritative reports, Woofter, Dick, and Bierring state that sickle cell anemia can occur in white persons. They describe a family without known influences but with a brother and sister having characteristic anemia and ulcers of the ankles. Their grandmother had pallor and ulcers of the ankles, a father and uncle were pale and had recurrent ulcerations since childhood; one brother had delayed sickling, and another brother was apparently normal.

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LICHENOID DERMATITIS. Eugene S. Bereston, *J. Invest. Dermat.* 7:69 (April) 1946.

The author presents his observation of 200 cases of so-called lichenoid dermatitis, a chronic dermatosis which occurred among personnel stationed in the South Pacific area and other areas where quinacrine hydrochloride was administered in relatively large amounts over long periods.

Three distinct clinical types of lesions were observed. The eczematoid type was the commonest and usually involved the dorsal surfaces of the extremities. The lichen planus-type often involved the entire body, including the mucous membranes. The mixed type consisted of eczematoid and lichen planus-like lesions occurring in the same person. All three types often changed into an exfoliate dermatitis of serious proportions.

The histopathologic picture chiefly resembled that in lichen planus, although some charactertics of psoriasis were also present.

The prognosis for cure of the acute lesions is excellent provided the patient is evacuated from the tropics.

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TREATMENT OF INFECTED SEBACEOUS CYSTS. Jack Fishman, *U. S. Nav. M. Bull.* 46:917, (June) 1946.

A new method is described for the treatment of infected and non-infected sebaceous cysts. The technic consists in making a stab wound into the cyst, evacuating the contents and placing a small solid piece of silver nitrate into the cavity. In about twenty-four hours the wall of the cyst becomes discolored, and it is removed from the surrounding tissue by a hand forceps. The cavity is allowed to heal by granulation. No recurrences or ill effects were noted in 512 cases observed a period of one year.

PEDIATRICS

MISTREATMENT OF CONGENITAL HEMOLYTIC DISEASE (ERYTHROBLASTOSIS FETALIS) BY TRANSFUSION OF RH-POSITIVE BLOOD AND MATERNAL SERUM. A CASE REPORT. Alexander S. Wiener and Malcolm A. Hyman, Jewish Hospital of Brooklyn, Brooklyn, N. Y., *Journal of Pediatrics,* 29:498-503, October, 1946.

"The use of Rh-positive blood in transfusing children with erythroblastosis fetalis is condemned by citing the history of a fatal case so treated.

"Rh negative blood survives in erythroblastotic infants for two or three months, whereas Rh positive blood is rapidly destroyed and eliminated in several hours. The explanation lies in the presence of antibodies in the baby's serum which destroy Rh positive cells. These antibodies which are derived from the sensitized mother's blood and cross the placenta, remain in the infant's circulation for about one month after birth. They will destroy not only the baby's cells, but also any additional Rh positive cells which may be added.

"In the case cited, a baby with erythroblastosis was given maternal serum (20 cc.) by injection as well as Rh positive transfusions. The serum was taken from the mother and given to the baby thirty days after birth. As a result of this procedure the hemoglobin tumbled from 50 per cent to 28 per cent in twenty-four hours, and death soon ensued."

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THE RH FACTOR AS APPLIED TO THE OPERATION OF BLOOD BANKS. Lester J. Unger, M. Weinberg and M. Lefkon, *American Journal of Clin. Path.* 16:498-505, August, 1946.

"A program is described for convenient testing of donors and recipients in a blood bank. Rh typing as well as A-B-O grouping is performed with all blood specimens. The slide technic using anti-Rh_0 blocking serum is speedy and entirely dependable as a replacement for the lengthier and more intricate tube tests. Human rather than animal serum should be employed, since "the bloods of all newborn infants, Rh negative as well as Rh positive, react positively with anti-Rh serum of animal origin."

"Since the Rh^1 and Rh^{11} factors almost never give rise to Rh transfusion following sensitization, anti-Rh^0 serum is adequate for ordinary hospital work. If, however, one is somewhat more exacting and wishes to eliminate all Rh^1 donors, anti-Rh_0 blocking serum should be used to examine the blood of patients and anti-Rh^1_0 serum (or serum containing Rh_0 blockers and Rh^1 agglutinins) to examine the blood of donors."

Comment

The two articles above are very closely related, and I felt that it would be right interesting to abstract both of them for the benefit of the physicians of our state. There has been so much written on these subjects, and there is so much yet to be learned, that I feel that it is well for all of us to keep abreast with what is going on in regard to these subjects.

PEDIATRICS

LATE SECONDARY TONSILLAR HEMORRHAGE: II. STUDIES OF ASCORBIC ACID— Harry Neivert, Leo A. Pirk and Recha Engelberg, Columbia University College of Physicians and Surgeons, Presbyterian Hospital, N.Y., and Hoffman-La Roche, Inc., Nutley, N. J., Arch. Otolaryng. 43:568-77, June 1946.

"These studies were made to demonstrate the relationship between vitamin C deficiency and late hemorrhage following tonsillectomy and the relationship between the vitamin C plasma level and the salicylate-induced hypoprothrombinemia. The first group studied consisted of 246 patients. The preoperative and postoperative plasma levels of vitamin C were determined by the Mindlin and Butler method, and value of, or below, 0.5 mg. per 100 cc. of blood plasma were considered as subnormal. Preoperatively, 134 patients were in the subnormal and 112 in the normal group. Reexamination of the entire group on the fifth to eighth postoperative day, showed that of the 112 with normal preoperative values, 28 now had levels below normal. The remaining 84 had a reduced, although still normal, concentration of vitamin C. Late hemorrhages occurred in 21 cases; 15 of these had hypovitaminosis C preoperatively and 4 a subnormal level postoperatively. All these patients were given liberal amounts of acetylsalicylic acid for relief of pain.

A second group of 197 patients, operated on for tonsillar disease, were given 300 mg. of vitamin C once a day for 3 to 6 days preoperatively and for 1 week postoperatively. The plasma levels of vitamin C were determined postoperatively in many of these patients and always found to be well above 0.5 mg. per hundred cc. Only 8 instances of late tonsillar hemorrhage occurred in this series, the wounds healed better, the tonsillar fossae appeared cleaner, and the patients' general condition seemed more satisfactory than in the first group.

It is recommended that when acetylsalicylic acid is used, 100 mg. of vitamin be given with each 0.6 Gm. of acetylsalicylic acid to protect against reduction of vitamin C and thrombocytes. The concurrent use of vitamin K is not necessary."

Comment

There has been quite a good deal of discussion in regard to the cause of light hemorrhage following tonsillectomy; so I feel that it would be of interest to the medical profession of our state to read the above article. It is well to have these suggestions in mind when recommending and doing tonsillectomy.

VETERANS ADMINISTRATION CASE REPORT

W. W., aged 51, admitted 5/27/47, expired 8/2/47. Chief complaint at admission was low back pain dating back approximately three years. Pain was a dull, incapacitating ache, more severe during damp and cold weather. About four months previous to admission the pain became more severe and continuous and was relieved only by sedation and aspirin. There was no sciatic radiation or leg symptoms. Coughing and sneezing had no effect. Patient had always worked hard as a farmer and mail carrier up until about April 1st when he was forced to retire because of back pain. Military history non-contributory. No history of chronic family diseases. Patient has been in good health up until onset of present illness. He has had no operations or injuries.

Examination showed a fairly well-nourished, middle-aged, colored male who appeared to be in moderate distress with back trouble. He walked erect holding his spine stiff. He was well oriented. There was a fluctuant, moveable lipoma on the right frontal area about 6 cm. in diameter. There was bilateral pterygia with the left pterygium growing over the corona. Patient was edentulous. The lungs were essentially negative. Blood pressure was 188/120, pulse, 90. Heart: There was a slight shock but no thrill or precordial bulge. Heart sounds had fair quality but were somewhat diminished at the apex. Rate was normal and rhythm was regular. The aortic second sound was greater than pulmonic second sound. At the time of admission, the abdomen was essentially negative. Rectal examination was normal with the exception of slightly enlarged and tender prostate. Back and extremities: Patient stood irregular with a rigid back. There was very little motion in the lumbar spine. Flexion of the lumbar spine was limited to about 45 degrees. Extension, lateral bending, and rotation were somewhat limited. The normal lumbar curve was absent. The patient was able to raise the extended straight legs to 80 degrees bilaterally. Kernig's, Lasegue's, and Patrick's signs were absent. Neurological examination normal. There were palpable inguinal lymph nodes bilaterally.

Urinalysis on admission: Yellow, acid, specific gravity--1.020, no albumin or sugar, 1-2 WBC's, 3-4 epithelial cells and amorphus deposits. Blood count: RBC 3,840,000; WBC - 7,000; hemoglobin-74%, differential: 66% neutrophils, 30% lymphocytes, 4% monocytes; sedimentation rate - 55. Serology was negative. X-ray examination of the chest: Heart and lungs negative. Lumbosacral spine: "There was marked destruction with compression of L_1 and of D_{10}, the exact nature of which is not understood. It may be pathological fractures following metastasis." Cervical spine: "Slight arthritic changes especially of C-5 and C-6. X-ray of the dorsal spine showed a narrowing with compression of D_6 and D_{10}. There are small areas of rarefaction in both scapulae. There are mottled areas of rarefaction involving the upper part of the sacrum and ilium suggesting metastasis."

About two weeks after admission, a mass was observed in the right lower quadrant. The mass was freely moveable, about the size of an orange, and was not tender. During the first 1½ months of hospitalization, patient was afebrile. However, appetite became progressively poorer. He became more asthenic and he was markedly depressed about his condition. A G.U. examination on June 5 revealed a left spermatocele plus hypertrophy of prostate. Acid phosphatase examination and IV pyelography were recommended. On June 18 urine was examined for Bence-Jones protein, which was negative. There was a slight trace of albumin present at that time. Blood count on June 18 showed 2,650,000 RBC, 60% hemoglobin. Blood chemistry showed alkaline phosphatase 12.6 Bodansky units and acid phosphatase of .96 Bodansky units. Cephalin flocculation test was negative. IVP on June 16 showed fair visualization on both sides with apparent satisfactory excretion of dye. There was a small density in the right lower hepatic border observed on films and also at previous examination. This was interpreted as a possible gall stone. There were marked bone changes in the pelvis and upper ends of both femurs suggestive of metastasis. Barium enema on June 20 was negative. Retrograde pyelogram was done on June 27 but was unsatisfactory because of barium in the colon. Cystoscopy at time of retrograde pyelogram showed benign prostatic hypertrophy with median bar enlargement. There was extrinsicopressure on the bladder from the mass in the right lower quadrant. Bacteriological examination of urine obtained from kidneys at time of retrograde examination was essentially negative. The urologist commented that serum alkaline phosphatase was slightly elevated consistent with the diagnosis of metastatic bone destruction. The prostate itself, however, could be ruled out as a source of metastasis especially since there was low acid phosphatase. The x-rays did not exclude a hypernephroid tumor of the kidney.

Serum calcium on June 26 was 14.5 mm%, serum inorganic phosphatase was 5.3 mm%.

On June 27, the patient was presented to the Surgical Staff Conference where it was the opinion that metastasis was too extensive for the patient to be benefited by surgery. It was recommended that patient be transferred to another hospital for irradiation therapy. On July 4, arrangements for this transfer were completed but in spite of a blood transfusion the patient was too weak to have been able to tolerate the trip. On July 5, patient developed urinary incontinence which persisted almost continuously for the duration of his hospitalization. Since that time, for the most part, he refused to eat and he became irrational much of the time. On July 10, there was fecal incontinence. Clay-colored stools were noted. Abdomen was moderately distended. Mass was not increased in size. Icteric tint was noted in the sclera. Icteric index done on July 10 was 12.5. The direct van den Bergh was positive at five minutes, the indirect van den Bergh was negative. After that time, the course was progressively down hill with the patient's continuing to refuse to eat and to lose weight. The abdomen gradually became more distended but the jaundice disappeared. On July 31, icteric index was 6. Total serum protein 6.6%, albumin 1.6% and globulin 5.0%. On August 1, patient expectorated bright red blood. On the following day, temperature rose to 105 degrees. He vomited a coffee-ground material all day long, became somnolent. He developed rales in both chests with dullness to percussion. Respiration became shallow and slow and the pupils became dilated and fixed. At 9:30 P.M., August 2, patient expired.

SAVINGS PROGRAMS

Two ten-year savings programs that will bring a good income for twenty years are suggested especially for the consideration of physicians. The United States Treasury has set up these tables to prove the soundness of a bond-buying program to insure financial security:

$50 and $100 Income Each Month for Ten **Years Consecutively**

When You Are
40 INVEST
41 $93.75
42 Each
43 Month
44 For
45 Ten
46 Years
47 And
48 When
49 You
Become 50 You Are
51 PAID
52 $125.00
53 **Each Month**
54 For 10 Years.
55 **ENJOY** $50.00
56 each month
57 and RE-INVEST
58 $75.00
59 And
When You Are 60 You Will
61 Have com-
62 ing to YOU
68 $100 each mo.
64 for 10 years.
65 ALL for your
66 Enjoyment.
67 $18,000 for
68 $11,250
69 Invested.

$100 Income Each Month for Twenty Years

When You Are
40 INVEST
41 $131.25
42 Each
43 Month
44 For
45 Ten
46 Years
47 And
48 When
49 You
Become 50 You Are
51 PAID
52 $175.00
53 **Each Month**
54 For 10 Years.
55 Enjoy $100.00
56 each month
57 And RE-INVEST
58 $75.00
59 And
When You Are 60 You Will
61 have com-
62 ing to YOU
63 $100 each mo.
64 for 10 years.
65 All For Your
66 Enjoyment.
67 $24,000 for
68 $15,750
69 Invested.

State Board of Health

Felix J. Underwood, M. D.

INDUSTRIAL HYGIENE

by

J. W. Dugger, M.D., Director

Industrial hygiene embraces the professions of medicine, engineering, nursing and chemistry. The division director is a physician and the staff also includes an engineer, a chemist and a nurse, all especially trained for industrial hygiene work. They are prepared to give broad consultative service to industry, ranging from good housekeeping procedures to the control of industrial poisons or assistance in the planning of industrial medical programs. The over-all objective is to promote good health among workers. The growth of industrialization in Mississippi in recent years emphasizes the need for such a program. The results obtained in improving the physical well-being of vast numbers of workers plus increased efficiency and production attest the value of the industrial hygiene program.

Much time has been devoted to educating industry as to the importance of a clean, safe place to work and as to the health of the individual employee as a profitable investment. Routine factory inspections as required by law provide opportunities to promote better health and hygiene programs. Through them industries are made acquainted with the services available to them and are encouraged to take fullest advantage of the assistance the Industrial Hygiene Division can render. Plant managers and operators have shown increasing appreciation of this help and are calling upon the Division with gratifying frequency.

Some typical examples include the dust hazard in a mixing room of a large glass works. On advice from the Industrial Hygiene Division a dust collectiing system was installed which eliminated the hazard. A large textile plant was bothered with a high dust concentration due to a low grade of cotton used at that time; the ventilation in the mill was also very poor. The manager of the mill called upon the Industrial Hygiene Division for advice and followed it. The dust was controlled by the use of a very fine oil mist spray installed in the opening room. The ventilation problem was solved by the proper location and construction of large exhaust fans. Assistance was given several cottonseed treating plants in the Delta in reworking control systems to keep the mercury content down within the minimum allowable concentration considered safe. A marble works is now in the process of designing a complete dust collecting system for its plant, which will be installed shortly.

Manufacturing plants in the state employing eight or more people totalled 1,500 as of July 1; wage earners in these plants number about 85,000. The total number of plants now paying registration fees is 180, and the number of employees about 16,000. Fees collected for the fiscal year 1946-1947 amounted to about $16,000.

A very small percentage of the 1,500 plants employing eight or more people have a sufficient number of employees to maintain full or parttime medical service. The Industrial Hygiene Division, realizing the need of such service in small plants, gives special attention to educating both employers and employees as to the importance of physical examinations in industry. This will not only improve the health of employees; it will prevent the employment and training of workers not physically fitted for the tasks to which they may be assigned and will result in financial savings to both employer and employee. The value of this type of service can hardly be estimated until such a program has been in operation a few years. However, the reception of the plan by industry has been most gratifying and is an index of what is needed and can be accomplished in this fertile field.

The Mississippi State Medical Association at its annual meeting at Biloxi this year heartily approved the plan of physical examinations for industry as drawn up by this Division. Under such a system, with the keeping of uniform records, physicians of the state can render valuable and efficient service to a large and growing group of Mississippi citizens. Dr. B. J. Stern in a recent book, states:

"The field of industrial medicine offers one of the most fruitful approaches to preventive medicine and public health. As the schools are agencies through which children can be reached **en masse** for the application of the most advanced findings of scientific medicine, so the factories, workshops, and commercial establishments afford the opportunity to reach large aggregations of adult workers. The parallelism is by no means exact. Schools are largely public government agencies specifically directed to the improvement of those who attend them. Most industrial and business establishments are private enterprises in which the welfare of the workers is regarded as incidental to the profitable production of goods. The potentialities for preventive medicine are, none the less, present and the factories can serve as efficient centers for the promotion and application of public health procedures, such as inoculating against communicable diseases and setting higher standards for personal health and physical fitness. The factory likewise has significant influence on workers' health because it is a crucial part of their environment. Working conditions involving hours of labor, tempo of work, plant sanitation, illumination, ventilation, safety provisions, occupational disease control, and industrial nutrition programs can go a long way toward determining the extent to which health or disease prevails in a population . . . Adequate medical supervision of the workers within the factory is capable, if so designed, not only of preventing disabilities but of discovering systemic diseases, allergies, disorders of nutrition, dental needs, and functional disorders of all sorts in their incipient stages and, with proper coördination with community health resources, of curing such disabilities. With fuller collaboration of the medical profession, of employers and labor, and of the government, industrial medicine can play a preventive and a curative role far beyond its present scope."

The Division of Industrial Hygiene coöperated with the Tuberculosis Control Unit of the State Board of Health in making mass x-rays and blood tests for practically all the major industries in the state. This is in line with efforts to have all communicable diseases as well as occupational diseases reported. To this end, the Division, in undertaking any form of survey, service or consultation, first confers with the local health officer, enlists his interest and aid and thus ties in the program of the Division with local health department activities.

Plans are now under way to conduct a cancer survey program in industry similar to the survey on tuberculosis. Through systematic physical examinations of all employees, the finding of early cancer will be greatly aided. This will mean definite progress in cancer control.

Engineering and Chemical Services

Although only recently inaugurated, the engineering program has accomplished much more than was expected. Practically all types of industries are found in the state and each of these presents an individual problem. Analysis and study is made of dusts, gases, vapors, fumes, smokes, mists, toxic materials, and any other substances in the environment which might be deleterious to the health of the worker.

Laboratory facilities are provided for such studies, where specific and detailed information in indicated. The laboratory service is done in coöperation with the State Hygienic laboratory. Dust samples collected in several large industries lead the managers to install equipment for proper ventilation to eliminate these hazards. Dust results from many industrial operations such as crushing, grinding, chipping and abrasive procedures, and the effect of dust exposure depends upon kind, concentration, and particle size of the dust. Inhalation of dust containing free silica produces silicosis, one of the most hazardous of occupational diseases and one whose control is primarily an engineering problem.

Organic solvents play an ever increasing role in modern industry. Their number and uses are limited only by the ingenuity of the chemist. Two solvents used extensively in Mississippi industries are benzene and carbon disulfide. Due to the volatility of benzene its vapors are usually found in the atmosphere where it is being used. Workers in these areas are therefore exposed directly to the toxic action of benzene. Repeated and long exposure to benzene results in permanent damage to the entire blood stream and death may result. Carbon disulfide is used widely in the manufacture of artificial silk and rayon, in printing establishments, and in cleaning and dyeing es-

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1. Stern, B. J. *Medicine in Industry.* (Studies of the N. Y. Acad. of Med., Committee on Medicine and the Changing Order). N.Y., The Commonwealth Fund, 1946.

tablishments. Like benzene it is very volatile. It may affect the nervous system. Short. intermittent exposures may produce narcotic effects, while continuous exposure to high concentrations often results in temporary or permanent insanity. Control of solvent vapors is usually an engineering problem.

Carbon monoxide is very dramatic in its action and is an ever present threat not only to the home but to many industrial operations. It may be produced in garages, repair shops. foundries, and in the manufacture of gas and chemicals. This Division is called upon frequently to determine whether carbon monoxide is present in the atmosphere. One widely reported case was a garage in which two nightwatchmen were found dead on two successive nights. High concentration of carbon monoxide gas was found in sufficient quantities to have caused the death of the two men.

Another common hazard in industry is lead poisoning. Exposure may occur in the use and manufacture of paints, sprays, insecticides, batteries, in melting lead in lithographing plants, and in welding operations.

It is well known that occupational accidents take an enormous toll among industrial workers and add greatly to the cost of insurance coverage. These involve such injuries as abrasions, lacerations, fractures, concussions, burns and eye injuries. Of greatest importance is prevention of these accidents. To do this, much depends upon the use of engineering and educational approaches; also the use of protective equipment and clothing. Engineering principles are used in the investigation and control of unsatisfactory conditions of illumination, abnormal conditions of temperature, humidity and pressure, general sanitation in and around the plants, working conditions which may result in burns of various types or conditions creating a potential hazard from the standpoint of mechanical accidents. Control procedures are generally worked out by the engineering personnel of the Division. The laboratory is well equipped to assist in this control through its careful analyses and studies.

Industrial Nursing Services

Consultation on nursing services, the promotion of health programs, in-plant feeding programs, visits to managers, personnel and safety directors, county health departments, local physicians and plant physicians, are included in the nursing service given by the Industrial Hygiene Division. It took the recent world war to point up the value to industry of good medical and nursing programs. Their value proved during a crisis in preventing absenteeism, developing healthier, more efficient workers, and reducing insurance costs, many industries saw the wisdom of continuing such programs.

Nurses in industry are valuable in promoting better working relationships between employer and employee, better understanding between employers, employees and medical directors, consultation on health and welfare problems in health education, counsel and advice on family problems, dental care, closer working relationships between county health departments and plants in the solution of problems of better industrial housekeeping—cleaner rest rooms and recreation rooms. A total of 800 visits was made by the nursing consultant during the two-year period ending June 30, with much attention being given to small plants unable to have a nursing service. The present goal for Mississippi is a nurse for every plant employing two hundred or more people.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Sept. 1947	Sept. 1946	Sept 5 Yr. Av.
Poliomyelitis	6	54	22.2
Bacillary Dysentery	11	454	645.4
Dengue	0	0	2.4
Diphtheria	50	52	62.4
Influenza	16	2279	1657.8
Measles	3	154	107.0
Meningitis (meningococcus)	0	4	4.8
Other Forms Meningitis	4	3	3.4
Pellagra	1	195	173.2
Pneumonia	43	898	535.8
Pulmonary Tuberculosis	153	185	161.0
Scarlet Fever	24	48	36.2
Smallpox	1	0	.4
Tularemia	11	5	5.0
Typhoid Fever	6	9	16.2
Typhus Fever	5	15	19.0
Undulant Fever	4	14	9.8
Whooping Cough	17	477	510.8

Preparation under difficulties often makes for better preparation. Almost invariably students who have to work their way develop strength as they go along so that when they strike their life work they have gathered momentum and impact that will be a tremendous asset out in the field.

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CENTRAL MEDICAL AUXILIARY

The monthly meeting of the Women's Auxiliary to the Central Medical Society was held recently at the Sanatorium with Mrs. Henry Boswell as hostess.

Co-hostesses were Mrs. M. Mulhern, Mrs. C. A. Watkins, Mrs. Sam Carter, Mrs. E. D. Kemp, Mrs. Ray Biggs, Mrs. Allen A. Lilienthal, and Mrs. Lee R. Reid.

Mrs. T. E. Wilson, president, presided over the business session and Mrs. J. P. Wall gave the invocation. Dr. Henry Boswell greeted the group and spoke briefly on the preventorium and the sanatorium.

The reception rooms were artistically decorated with arrangements of mums in fall colors.

The next regular meeting will be in the form of a Christmas luncheon. The following guests and members attended: Mrs. W. Gordon Harnett, Mrs. J. Ralston Wells, Mrs. Otto H. Rosenkranz, Mrs. Thomas M. Dunn, Mrs. Sam Carter, Mrs. Henry Boswell, Mrs. L. W. Willey, Mrs. W. Lawson Shackelford, Mrs. M. Mulhern, Mrs. C. A. Watkins, Mrs. Charles Ward, Mrs. James Chustz, Mrs. Lee Lipscomb, Mrs. W. F. Hand.

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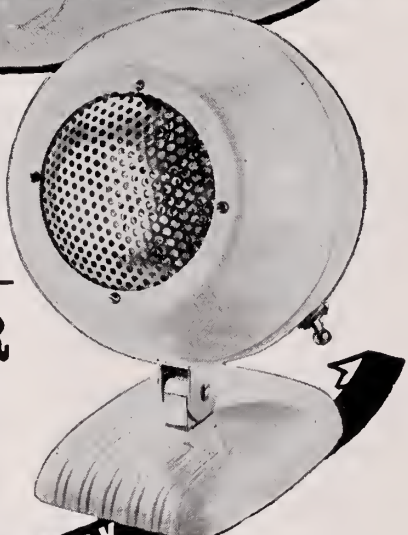

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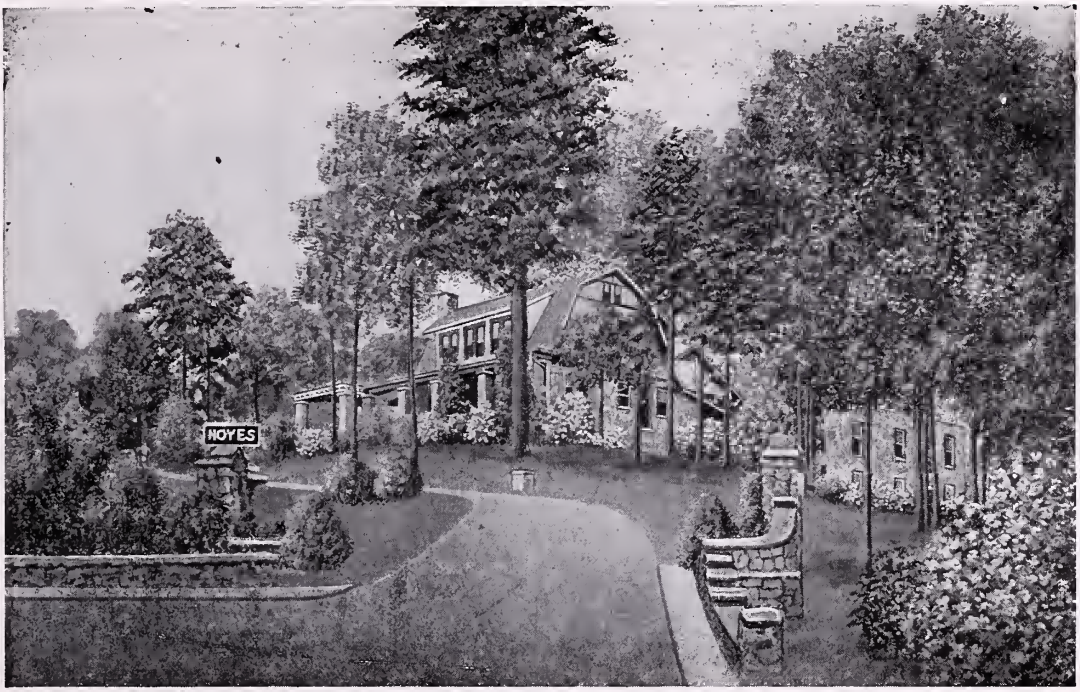

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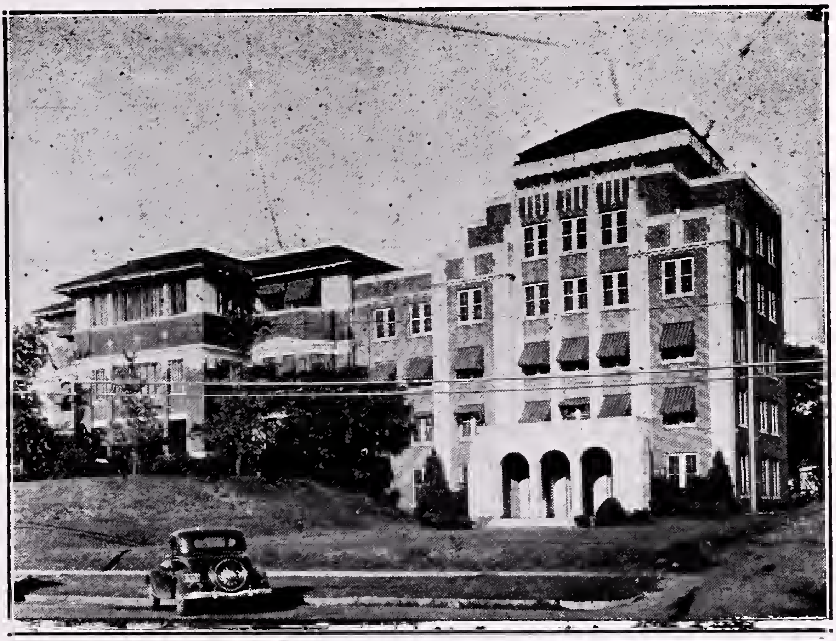

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The Mississippi Doctor

VOL. 25 BOONEVILLE, MISSISSIPPI, DECEMBER, 1947 NO. 7

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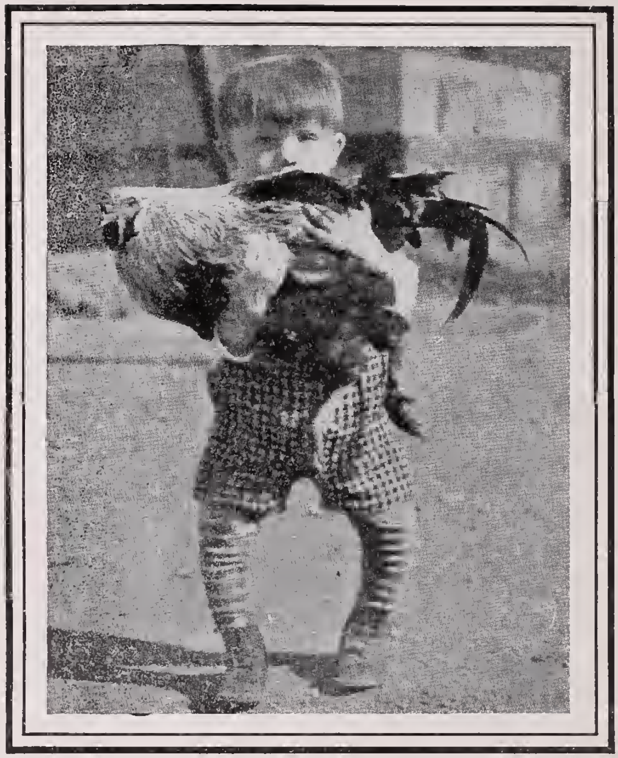

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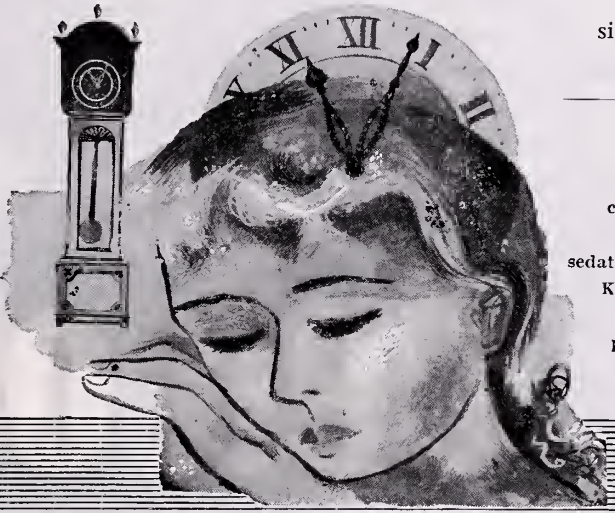

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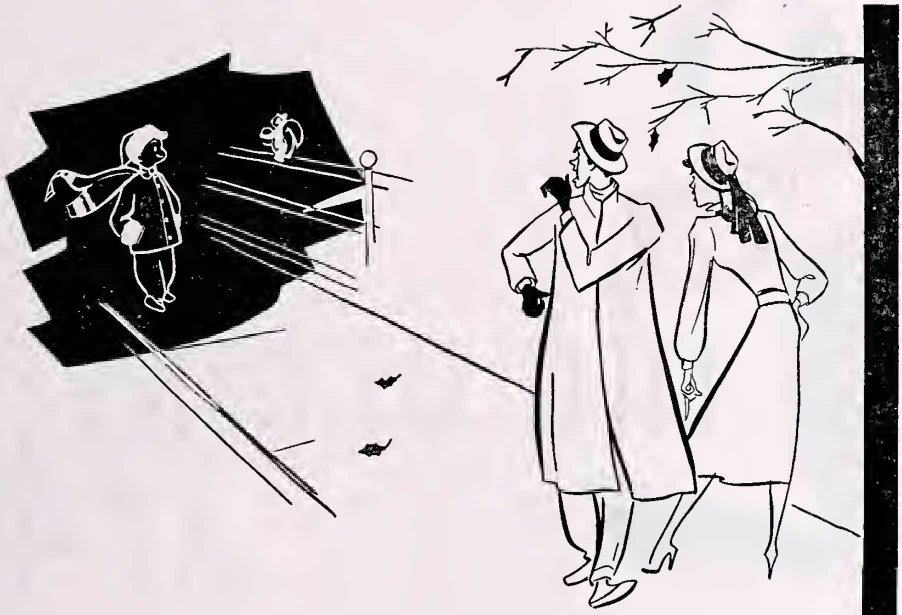

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[1] MacLeod, C. M.; Hodges, R. G.; Heidelberger, M., and Bernhard, W. G.: J. Exp. Med. *82*:445 (Dec. 1) 1945.

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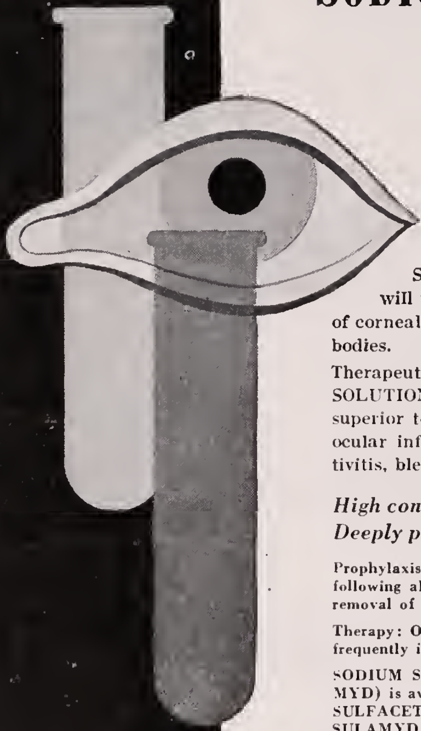

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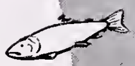

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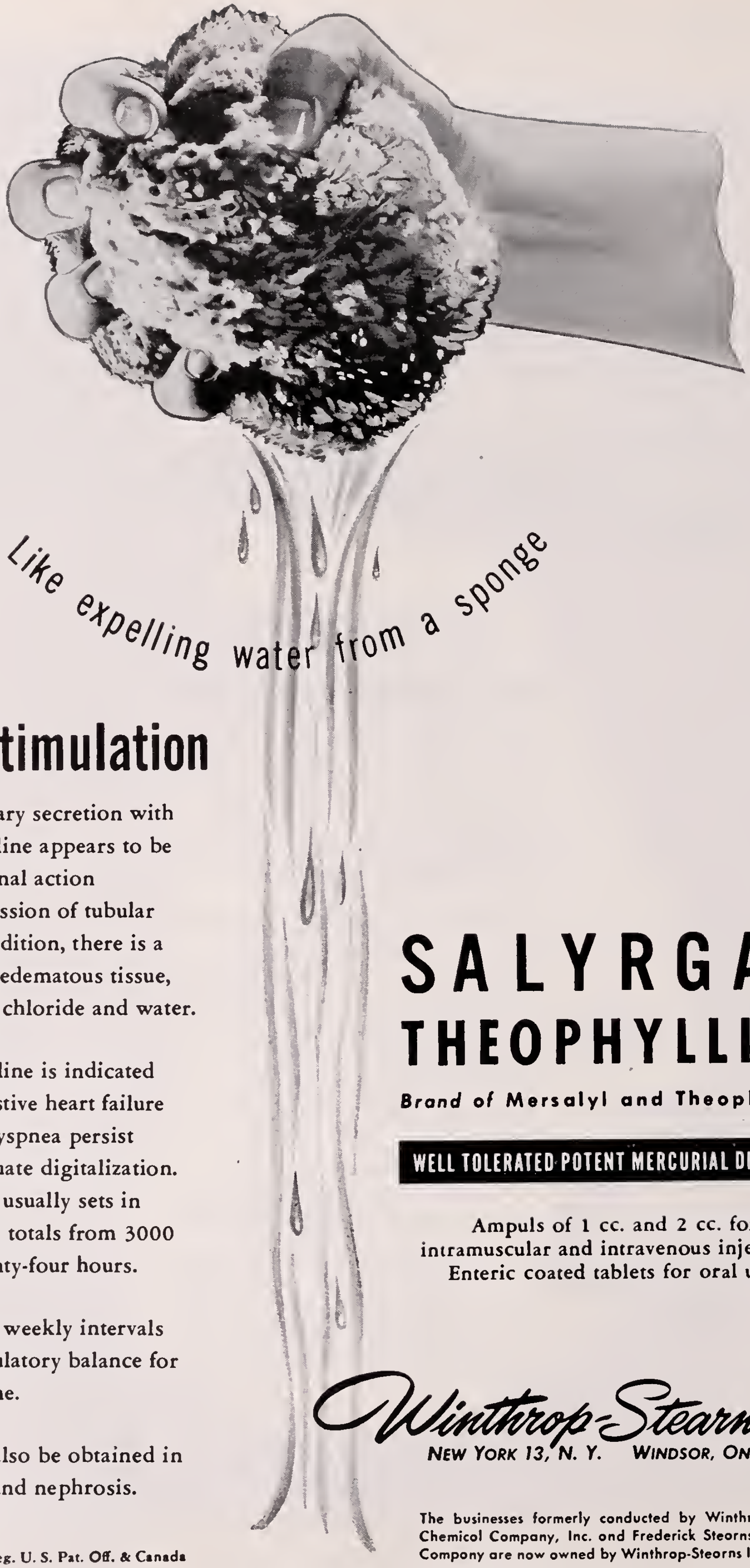
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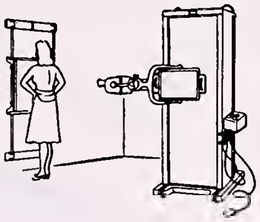

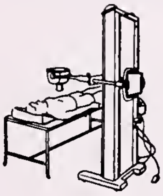

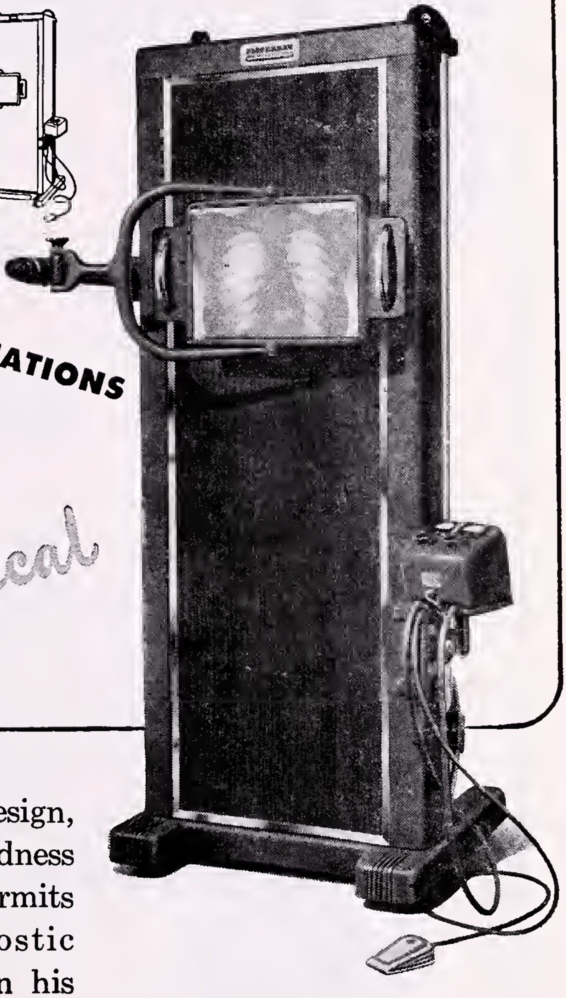

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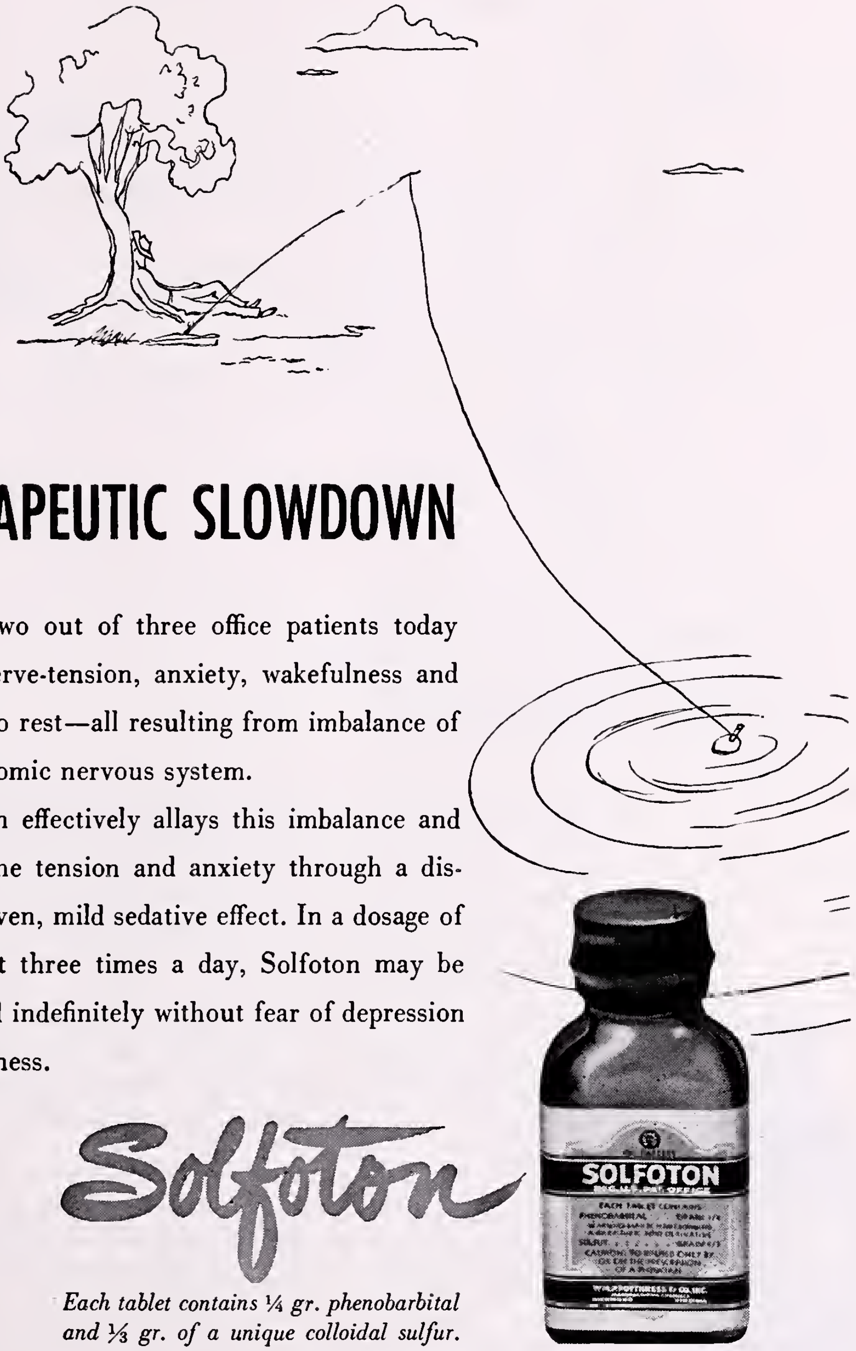

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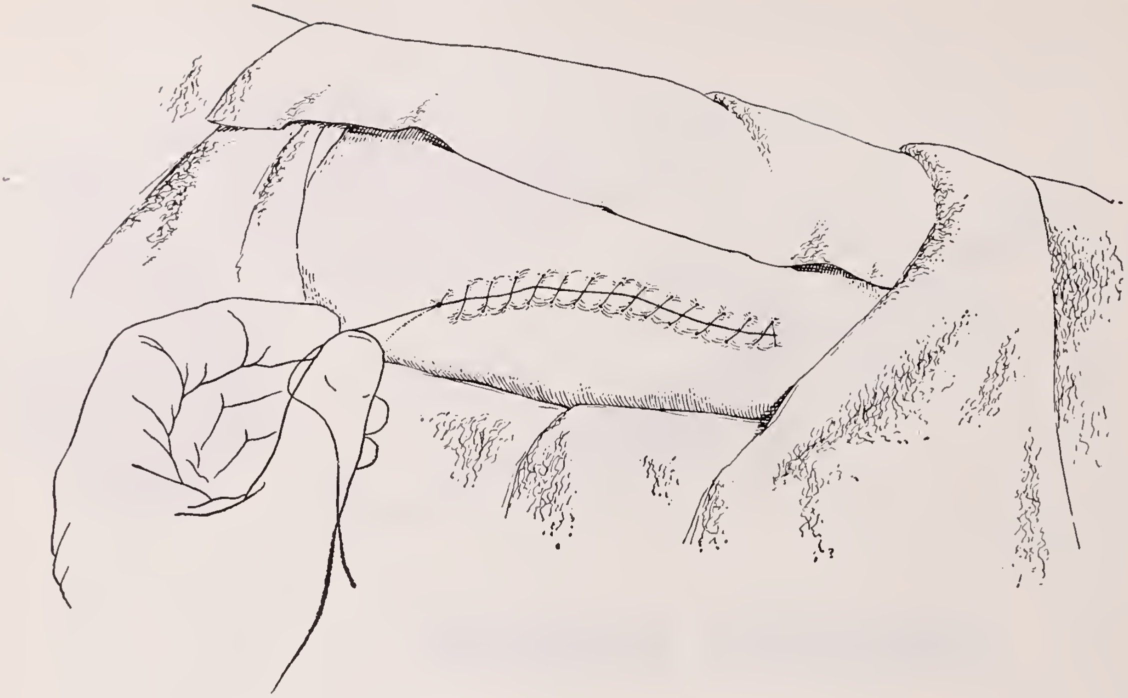

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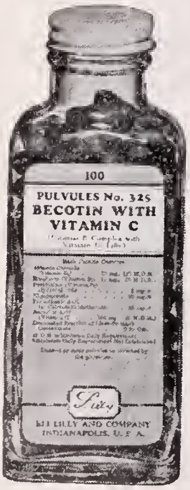

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Modern Concepts of Rheumatic Fever*

ALEXANDER T. MARTIN, M.D.,
New York City, N. Y.

The polymorphic character of rheumatic fever makes it one of our most difficult diseases for diagnosis. Its polycyclic tendency makes it even more difficult as regards prognosis. Unlike poliomyelitis, which strikes but once, rheumatic fever may occur again and again. Its course and its rate of recurrence is unpredictable. Its death rate is high and its capacity to disable is even higher. An estimated 40,000 die each year and the average age of death is thirty years. A great many of these are children in the first and second decades of life. One per cent of our wage earning population in America has rheumatic heart disease. Of the school population there is an estimated one to four per cent of children and young people afflicted with damaged hearts (about 200,000 between five and nineteen years). An estimated 800,000 to 1,000,000 persons have rheumatic heart disease contracted in most instances in early childhood. Rheumatic fever then, at long last, is now recognized as a major public health problem, and has become a matter of concern and action by many health agencies, both private and public. The American Academy of Pediatrics was really instrumental in bringing rheumatic heart disease within the scope and meaning of the word "crippling" and so made such a recommendation to the Children's Bureau back in 1937. This spearheaded the setting up of state programs for the care of children with rheumatic fever. These are now set up and operating in twenty-two states. The newly formed American Council on Rheumatic Fever is made up of many professional and non-professional organizations under the leadership of the American Heart Association and represents a concerted effort to integrate and forge these various groups into common action in the control of a common public health enemy. These are only two examples of two major professional organizations who are taking an active interest and "doing something about it."

So much has been written about the various aspects of rheumatic fever that I shall not dwell long on these, but will speak in greater part on diagnosis which is really the *sine qua non* in its control. I have stated that its polymorphism makes it a difficult diagnostic problem, and many good doctors will differ in their opinions. In many cases time remains the sole arbiter. At the outset I wish to emphasize and to point out that we should differentiate between rheumatic fever and rheumatic heart disease. Many months may elapse, following the initial infection, before clinical evidence (by the ear) of carditis is discovered. It takes time for a mitral valve, for instance, to become curled and shortened before incompetence of that valve can be detected clinically. By the same token that a child with poliomyelitis is often not diagnosed until after he is out of bed and found to be limping, so it is that rheumatic fever may not be suspected until long after the initial infection. The child with the damaged heart becomes a "cripple who does not limp." Is it not clear then that an early diagnosis is essential?

It is important that the doctor, the nurse, the teacher in the school and the parent screen out the early cases so that care early in the course of infection be instituted. The teacher is in a particularly good strategic position to do this, and teachers, by and large, should be trained to be more health conscious regarding their pupils. Many of them are, but this is not universal.

The child who is below par, who tires easily, is losing weight, is becoming more pallid and has general lassitude should be reported to the school doctor or nurse if they are available. If not, the parent should be informed. By no means do I wish to imply that these symptoms indicate that such a boy or girl, usually about seven or eight years old, has rheumatic fever. Such symptoms may be indicative of some other condition far removed from the rheumatic state. But they can be early symptoms of the disease under discussion. By the same token early cases of chorea or St. Vitus dance be screened out by the teacher in school and reported to the doctor. His responsibility is to differentiate between true chorea and habit spasms, a diagnosis none too easy. These children with chorea are usually girls near the age of adolescence.

---

* Read before the fifty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Feb. 12, 1947, Memphis, Tenn.

The polymorphic character of the disease brings in another group of symptoms which are not easy to interpret and they set up for the physician one of his most besetting problems in diagnosis. I refer particularly to "growing pains" which may be rheumatic or may be due to the process of growth combined with a fault in body mechanics. There is no doubt that many leg pains and knee pains are due to weak and pronated feet with a resultant faulty posture. Proper correction of these will usually make the leg pains vanish. I do not believe that there are many children who complain of leg pains at night just because of over-fatigue. In some there is a psychic element, the complaint being an effort on the part of the child to gain the attention of the parent. The diagnosis of "growing pains" is far from easy and may require observation over a period of time to establish it.

Polyarthritis, evidenced by painful, tender, red, hot and swollen joints is not so common in the child. It is for this reason that many cases of rheumatic fever remain undiagnosed. Some of the most severe cases of rheumatic carditis which I have seen have been those in which there has been no preceding history which would suggest joint involvement. Joint pains are usually attended by rheumatism. Rheumatism is not always attended by joint pains. The younger the child the less liable are the joints to be involved. I need not remind this audience that a single joint involvement (acutely inflamed) is probably not rheumatism. A polyarthritis is the rule.

Such symptoms and signs as recurrent abdominal pain, (sometimes simulating appendicitis,) skin rashes called erythema multiforme, frequent nose-bleeds, subcutaneous nodules, nervous twitchings, any or all of these may be associated with the rheumatic state.

In nearly every instance the heart is involved and affected to a greater or less degree during the course of rheumatic fever. The degree is dependent upon the number of recurrences, and, as has been stated, these are more often the rule than the exception. Von Glahn has found the Aschoff body in the myocardium forty-four years after the primary infection. This gives an index of the chronicity of the disease and the unpredictability as regards prognosis. The heart becomes the major organ which is damaged, the amount of which, in turn, governs often the life span of the individual. As I have stated previously, clinical evidence of heart damage often cannot be detected until many months after the primary infection. Other structures and organs of mesenchyme origin are often involved in the rheumatic process, such as the aorta, the blood vessels, the pericardium, the pleura, the peritoneum, the lung, the kidneys, and the brain. We are too apt to think of rheumatic fever in terms of heart disease rather than as a generalized infection affecting many structures.

With the active infection there is fever and increased heart rate. This latter sign—tachycardia—is one of the most reliable clinical signs we have to indicate activity of the rheumatic process and may persist for many weeks or months after the fever returns to normal. Sir Thomas Lewis many years ago stressed this point. It can well be a guide as to when to abandon bedrest, for instance. It has been my custom to have the sleeping pulse recorded as a more accurate index of cardiac activity. This should be so recorded.

The analogy between rheumatic fever and scarlet fever is remarkably close. This has been pointed out by Escherich and Schick in the non-suppurative forms of scarlet fever and later by Coburn in rheumatic fever. All of us have seen cases of scarlet fever in which rheumatic fever or carditis or nephritis followed as late sequelae. These workers have postulated three phases, Phase I, Phase II and Phase III in the course of the disease. Phase I represents the initial infection produced by the Group A hemolytic streptococcus, usually a sore-throat (pharyngitis or tonsillitis) of a few days' duration. Phase II follows as a quiescent period of from two to three weeks. This has been called the pre-rheumatic phase, and it is in this phase that occur certain still obscure immunologic reactions in the susceptible individual which ushers in Phase III, the rheumatic fever phase, the duration of which may be months or years. If we know how to prevent the onset of Phase III, we would solve the problem of rheumatic fever. There has been great promise that the disease can be materially reduced by cutting down the number of hemolytic streptococcus infections and the carrier rate by the use of sulfonamides or antibiotics. Accumulating evidence from both the Army and Navy indicate that chemoprophylactic programs with sulfadiazine on a large scale have definitely lowered the incidence of scarlet fever and upper respiratory infections caused by the hemolytic streptococcus with a corresponding reduction in the case of rheumatic fever. This is further confirmatory evidence that the disease is in some way linked with the Group A hemolytic streptococcus. If we accept this postulate in the pathogenesis of the disease we should make our frontal attack against this organism.

The cause of rheumatic fever is not known but the linkage to hemolytic streptococcus is close. This organism has been likened to a detonator which sets off a charge, the unknown factor X. There are many interesting theories as to etiology, all of them attractive to speculate about. There is the theory of allergic sensitization of mesenchymal tissues by sensitizing antigens which has some supporters and which has been likened to serum sickness. There is the theory of a specific strain of the Group A hemolytic streptococcus acting as a predisposing factor in the production of the disease. This supports Keogh's hypothesis that the clinical range proportion of disease produced by a given streptococcus are specific characters of that strain. There is the theory of enzyme response, with cholinesterase and hyaluronidase suggested as having a part in the production of the disease. So the field is open to any who may venture into this challenging field of research.

As regards the treatment of rheumatic fever, bed rest during the acute phase is essential. For the young child this is most difficult and custodial care often becomes the chief task of the nurse. But it is just as important for the child with rheumatic fever to have bed rest as it is for the child with tuberculosis. This may mean many weeks and often months. Bed rest is a conserving process for the heart which is already damaged. If, by bed rest, you can slow the heart ten beats per minute, you will have saved that vital organ about 15,000 less systolic contractions in twenty-four hours. As with other conditions bed rest can be much abused. Just when to allow the child or young adult out of bed poses one of our most perplexing questions. Each case must be individualized. The erythrocyte sedimentation rate is, at present, our most reliable and sensitive determinant of activity or non-activity. Even this is not always specific or infallible. Some few patients will show an accelerated sedimentation rate for many months. In the absence of other clinical signs of activity I would allow these patients out of bed with graduated activity. Clinical observation and repeated sedimentation rates can be made the criteria of further progress. No hard and fast rule can be laid down for all patients.

The drug, par excellence, in the treatment of acute and sub-acute rheumatic fever is salicylate. This should be given in maximal doses up to the tolerance of the individual patient, and should be continued for a much longer time than we have hitherto used it. It is particularly effective in patients suffering from polyarthritis, with painful, tender and swollen joints. In children aspirin or empirin is tolerated better than sodium salicylate. Very heavy doses have been given intravenously by Coburn over a period of four to six hours, that is ten grams of sodium salicylate in 100 cc. of normal salt solution, giving a rapid rise in the plasma salicylate to as much as thirty-five milligrams per 100 cc. The purpose of such high dosages was threefold, first to make the patient quickly asymptomatic, second to prevent carditis, if possible, and third to bring the sedimentation rate more quickly to normal. However, severe toxic reactions have been reported such as severe acidosis with tachypnea, hypernoea, deafness, tinnitus and delirium. Other workers as Swift and also Taran have cautioned against such large doses being given parenterally, and have advocated the use of sodium salicylate by mouth, in doses of ten to twenty grams (150-300 grains) spread over the twenty-fours at intervals of four hours. I am of the opinion that this is the more safe method and the better method to maintain a more constant plasma salicylate level day and night. A practical method has been worked out for quanitating the salicylate concentration in the blood which has proved useful in treatment. Hartman of St. Louis and others have pointed out the danger of acidosis from salicylism and this should always be watched for. If suspected, especially in children, the CO_2 combining power of the blood should be estimated. This is a reliable index of the acid-base balance. To attain and maintain the desired blood level of thirty to forty mgms. per 100 cc. of blood, a mouth dosage of 0.1 gm. of salicylate per kilogram of body weight is required. Some patients can take and may require higher dosage (0.2 gm. per kilogram) particularly if sodium bicarbonate is used in conjunction with the salicylate.

It has been demonstrated by Smull, Wegria and Leland that sodium bicarbonate lowers the plasma salicylate level by three possible means, first by increasing the excretion of the salicylate through the kidneys, second by raising the Ph of the gastric acidity and slowing absorption and thirdly by increasing extracellular fluid with corresponding decrease of drug concentration in the blood. Therefore, to give bicarbonate with salicylate is to defeat our purpose. Without bicarbonate the larger doses of salicylate are not so necessary, and the desired blood levels can be maintained with the smaller dosage. If the physician wishes to offset the gastric irritation which sometimes occurs with salicylate he can prescribe the drug in enteric coated tablets. This has proved to be most satisfactory.

As has been pointed out by Swift and also Taran it should be re-emphasized that salicylates have a favorable effect on the exudative phase of rheumatic fever but fail to influence greatly the proliferative lesions. I wish to stress that they do not curse the disease. It may be that given during the initial streptococcus throat infection in a known rheumatic in Phase I and continued through Phase II for three or four weeks the salicylates may act favorably to abort the reactivation of rheumatic fever. More data on this point is necessary. In the few children I have used this therapy I have been impressed. When to stop salicylate in the course of therapy in sub-acute rheumatic fever is always a good question. If other things are equal and the patient is asymptomatic, I would recommend that the drug be stopped after the sedimentation rate had returned to normal for two weeks.

An untoward effect of large doses of salicylate over a period of time may, in certain individuals, lower the prothrombin of the blood, giving a tendency to hemorrhage. Vitamin K may, therefore, be indicated to combat this hypo-prothrombinemia. The appearance of hemorrhage may be mistakenly attributed by the physician to the rheumatic infection rather than to salicylate. A simple knowledge of the fact should guide the physician in his treatment .

Rheumatic fever is one of the acute infections for which we have no specific treatment. Neither chemotherapy with sulfonamides nor antibiotic therapy with penicillin should ever be used in the treatment of the active phase of the disease. Both penicillin and the sulfonamides have not only been proved to be of no avail but they do more harm than good. This is a point I wish strongly to stress.

However, both drugs have an important place in prophylaxis—penicillin to prevent subacute bacterial endocarditis before operation on the teeth, tonsils, sinuses in a known rheumatic, and sulfadiazine as a chemoprophylactic in doses of 0.5—two grams a day in a known rheumatic. We hope, thereby, to control invasion by the hemolytic streptococcus and possible recurrence of the rheumatic infection.

Encouraging reports come in from both the Army and Navy, the result of large chemoprophylactic programs with sulfadiazine (one to two grams a day). They indicate a lowering of all streptococcal infections as against a control group and a co-incident lower rate in rheumatic fever. Associated with this lower morbidity rate is a reduction in the carrier rate as is shown by bacteriologic culture. Also many workers throughout the country have shown a lowering in the recurrence rate of rheumatic fever (in the rheumatic subject without activity) where sulfadiazine has been used as a prophylactic agent. When employed the patient should be kept under frequent observation by the physician.

I wish to sound a note of warning. With the wide spread and often injudicious use of these drugs, we will build up many drug-resistant strains of bacteria which will militate against their effectiveness when catastrophic and serious illness strikes. This, it seems to me, is a very real danger.

The recent World War has brought forth numerous reports of epidemics in both Army and Navy camps from sulfadiazine-resistant strains of streptococci, the result of large chemo-prophylactic programs.

I believe that the same danger pertains to penicillin and streptomycin and that cumulative evidence supporting this will appear in our medical literature in the years ahead.

In the approach to the control of rheumatic fever there are three cardinal principles to keep in mind:

1. Early recognition of the disease
2. Early and prolonged treatment
3. Prevention of recurrences

The last or recurrence rate can partly be answered by the control of hemolytic streptococcus infections with the employment of sulfadiazine as a chemo-prophylactic in doses of from one to two grams a day. This should be done under the observation and guidance of the physician.

The first principle—the early recognition of the disease—has to do with diagnosis and some of the minor and major patterns of the disease have already been discussed. The polymorphic character of these has been emphasized adding to our difficulty in diagnosis. Even greater is the interpretation of cardiac murmurs, especially the systolic murmur, When this is heard, either alone or in conjunction with a diastolic murmur, the disease is usually well advanced and cardiac hypertrophy is already present. Cardiac murmurs are generally of three types:

1. Physiological, sometimes called functional or accidental.
2. Congenital cardiac murmurs
3. Organic cardiac murmurs

The interpretation of these murmurs is often most difficult and makes rheumatic carditis for many of us the elusive thing it is. Often long periods of observation are necessary before a diagnosis can be made. The importance of a correct diagnosis is self-evident in the case of a child who, with nothing more than a very meager history of leg pains, is kept in bed for many months simply because of the presence of asystolic murmur which later turns out to be functional in character. The child never did have rheumatic fever but was treated as such because of a mistake in the interpretation of a cardiac murmur. Here is the genesis of a potential cardiac neurosis by building up an invalid reaction in a young person. So it is just as important to make a diagnosis of "no rheumatic fever" as it is to diagnose "rheumatic fever."

In any cardiac clinic the evaluation of murmurs becomes one of the chief responsibilities of the consultant. Such diagnostic aids as the x-ray, fluoroscopy, and electro-cardiogram should be available. Because of the great advances that have been made in the surgery of congenital cardiac anomalies, it is most important that this group be screened from organic cardiac murmurs and from those murmurs which are physiological in character. An estimation of the blood pressure should be made a routine procedure.

Electrocardiography is a most helpful aid in diagnosis. In acute rheumatic carditis the A-V conduction time is often prolonged, as is indicated by the prolonged P-R interval. This is one of the most constant abnormal findings. Recent work by Taran and Szilagyi in children suggests that "the duration of electrical systole (Q-T) both absolute and relative to diastole is significantly prolonged in all cases of acute carditis." They further suggest that "this disturbance adds a valuable diagnostic criterion for following the progress of carditis." An important contribution has been made by First, Stickle and Bayley in pointing out the value of the routine use of multiple unipolar precordial leads in detecting certain changes in cases of rheumatic heart disease not detected by the ordinary leads in the electrocardiogram. This may help to resolve some of the conflicting evidence regarding electrocardiographic findings in rheumatic carditis. As Taran has pointed out in his recent paper, "the electrocardiogram cannot be used as a specific diagnostic test for rheumatic carditis. The evidence presented is, in the main, of three sorts:

1. The duration of the A-V conduction time is increased, though not always.
2. There is frequent alteration in the ventricular complex, either the QRS, the S-T segment or the T wave.
3. Occurrence of irregularities in cardiac rhythm."

Clinically the significant objective findings of acute or subacute carditis are the tachycardia, the gallop rhythm and the development of one or more murmurs. The latter can often be mistaken for a pericardial rub, a not infrequent finding.

In summary I would wish to stress a few major points. Rheumatic fever is essentially a disease of childhood, the initial attack occurring usually between six and eight years. It is polycyclic in that it tends to recur. The recurrence rate diminishes after puberty. There is a close association with the Group A hemolytic streptococcus.

It tends to occur in families and there is a definite hereditary susceptibility.

In civilian life it has always been considered to be a disease primarily of the low economic group in which poverty, malnutrition, overcrowding, cold and unsanitary conditions played a leading role. However, these environmental factors do not explain the high incidence of rheumatic fever in the military services in both World Wars. In some camps in certain areas of our country, the disease became a major health problem. Almost always there was a close correlation with hemolytic streptococcus infections.

It is a seasonal disease, the greater number of cases being found in March, April and May.

It is a climatic disease in that it is not common in a warm tropical zone. The higher rate in the Rocky Mountain States, in Utah, the states bordering the Great Lakes, and the Middle Atlantic and New England States are evidence of this.

The disease has a high death rate. Of the deaths, about two-thirds occur in the first five years following the initial infection. These deaths in children are caused by the rheumatic infection and not from congestive failure. The deaths in adults are more often due to cardiac failure and decompensation.

The residual crippling due to heart damage is great constituting about 1,000,000 children and adults with rheumatic heart disease in this country.

Because rheumatic fever is a major health problem, there should be a greater awareness of its gravity. More funds are required to carry on intensive research, community programs should be set up, registries should be started and school health programs should screen out suspected cases. With these and diagnostic and care facilities made available to the practicing physician we can go a long way in bringing this dread disease under control.

X-ray Examinations In the Diagnosis of Heart Disease*

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Physical diagnosis has, since the infancy of scientific medicine, been based upon observation and deduction. To observe is to see, to feel, to hear. To deduce is to infer beyond immediate observation in the light of previous observations, as well as the accumulated observations of others—the sum total of which constitutes our scientific heritage.

In 1896, by his discovery of x-ray, Wilhelm Conrad von Roentgen gave us a tool for extending our powers of observation which was destined not only to rival Auenbrugger's contribution of percussion and Laennec's introduction of auscultation, but which today stands supreme as the most accurate method of observation of many diseases of the chest.

Pulmonary tuberculosis, for example, cannot be ruled out in the adult in the absence of an x-ray of the chest. In the study of the cardiovascular system the value of x-ray examination lies less in the detection of cardiac disease than in the study of the suspected, or known, diseased heart. It aids in the differential diagnosis of the type of abnormality and it may give aid in evaluation of the physiologic state of the heart—both prime factors in prognosis and therapy of the cardiac patient.

What are the methods of cardiovascular x-ray observation, deduction, and their possible values? If heart disease is known or suspected, the initial step in x-ray examination should be careful fluoroscopy. As in a general physical examination, the fluoroscopic observer should conscientiously study the appearance of the vascular structures and record them as found. A routine sequence of observation is of great help to the beginning examiner just as a form history and physical chart will aid the medical examiner in achieving a complete and constant result. The things specifically to be looked for and, one should add, the things the examiner must train himself to recognize, are: 1) position, size and shape of the heart; 2) character of cardiac movement; 3) calcification within the heart shadow; and 4) extracardiac changes which may prove relevant.

Position of the heart is more accurately determined by fluoroscopy or radiography than by any other method. Alterations in position do not as a rule indicate heart disease, but usually are the result of pulmonary or other cardiac changes. The **size** of the heart can be determined by x-ray with an accuracy unapproached by any other method. The simplest and most generally useful index of heart size is the measurement of the **transverse diameter of the heart** on a teleoroentgenogram. The latter is a postero-anterior projection of the chest taken at a seven-foot tube-film distance on an average inspiration. The transverse cardiac diameter is the sum of the measured horizontal distance from the midline to the maximum right and maximum left borders of the heart. In the average-shaped heart the maximum left border will be two to three cm. below the maximum right border. Together with the height and weight of the patient this observation can be compared with established average values based upon the measurement of thousands of normals[1,2]. The deduction is: If the measured heart varies by as much as 10 per cent from the predicted average it should be considered as "probably abnormal;" if it varies 15 per cent or more from the predicted normal it is almost certainly abnormal.

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Alternate methods of determining heart size may be used—orthodiagraphy, area or volume calculations, etc. With each, two things should be kept in mind: x-ray measurement of the heart yields an **index** of heart size, not a true measurement. It is this index which is correlated with clinical abnormality of the heart. The reliability of the measurement, and therefore the deduction, is dependent upon uniformity in technique. The target-film distance should remain constant, the patient should be well centered upon the film, without rotation, and the exposure of the film should be sufficient to penetrate the heart borders to a soft gray to permit accurate measurement and differentiation of the heart border from pericardial fat. Finally, the exposure should be made on a normal, not deep, inspiration, as breath-holding after forced inspiration is usually followed by a Valsalva test on the part of the patient. The patient forces the glottis shut and increases intra-abnormal pressure in full inspiration by "bearing down" with the abdominal wall muscles. This increases the intrathoracic pressure, producing a temporary reduction in heart size. The Valsalva effect added to the diminution in size during systole may introduce an error up to 2.5 cm. in the transverse diameter measurement.

As do most attempts at forcing biological data to conform to simple rigid criteria, the use of cardiac measurement **alone** in survey, or in sorting the abnormal from the normal-sized heart, falls short of 100 per cent correlation. How then may the radiologist make optimum use of changes in heart size in the diagnosis of heart disease? By fluoroscopy—specifically by fluoroscoping 1) all cases with measurements bordering the abnormal, 2) all cases presenting abnormal measurements without clinically apparent heart disease, and 3) clinically known or suspected heart cases. These cases may present chamber enlargement of one or two chambers, undetected by teleoroentgenogram, and only apparent by fluoroscopy. This procedure permits a true evaluation of the measurement in light of the supplementary data, of cardiac shape in the obliques, cardiac movement, extra-cardiac changes etc. as discussed below. It also permits the exclusion of those cases of apparent enlargement produced by skeletal deformities of the chest. The most common is the sternum recurvatum or depression of the lower part of the sternum. This deformity displaces and may compress the heart, increasing the transverse diameter on the teleoroentgenogram. At fluoroscopy lateral and oblique projections will show no enlargement. A commonly recognized clue to the presence of this abnormality is the increase in the downward obliquity of the anterior ribs.

The **shape** of the heart, particularly the enlarged heart, is exceedingly important. It may throw much light on the etiology of the cardiac abnormality, especially if it is structural or valvular in origin. Four distinctive cardiac silhouettes may be recognized in the p.a. projections: a) mitral, b) combined, and d) pericardial.

The "mitral" is pear-shaped with a straight or a slightly rounded prominence in the middle third of the left heart contour. This is due to fullness of the tip of the left auricle and the pulmonary artery, a configuration found in mitral stenosis and patent ductus arteriosus. Hyperthyroidism may produce a similar shape, as the left auricle may become enlarged in some cases. The funnel-breast deformity of the chest previously mentioned may simulate the mitral shape but lack of enlargement in the oblique projections will rule it out. The dilated left auricle can be identified in either the left or right anterior oblique view; in the former just below the left bronchus, in the latter projecting from the middle third of the posterior border of the heart shadow. In moderate enlargement of the left auricle a barium swallow will reveal the esophagus to be displaced posteriorly in a smooth concavity just below the level of the hilum of the lung. This is best seen in the right anterior oblique position.

The "aortic" shape results from prominent enlargement of the left ventricle. It is found primarily in aortic valvular disease and hypertension. Other conditions associated with either left ventricular hypertrophy or dilation and giving an aortic shape are: coronary insufficiency, coarctation of the aorta, ventricular septal defect, arteriovenous aneurysm, and tetralogy of Fallot. The "aortic" shape is characterized in the p.a. projection by a cardiac silhouette with a full rounded lower left border, the so-called "wooden shoe" appearance. Right ventricular enlargement may simulate left ventricular enlargement. The enlarging right ventricle may push the left ventricle laterally, upward and posteriorly. This can usually be recognized by noting that the actual apex of the heart is lifted well above the left diaphragm. This commonly occurs in cor pulmonale and tetralogy of Fallot. In addition, the tetralogy usually has a silhouette with a narrow "waist" of the heart, or a concavity of the left border due to a small pulmonary artery; at fluoroscopy there is absence of pulsation of the hilar vessels.

The "combined" configuration results from enlargement of all chambers and as a rule the heart is much larger than with mitral disease alone. In effect the shape is the aortic superimposed upon the mitral silhouette. The result is four rounded convexities of the left border which, from downward, are made up of: a) the aortic arch, b) the enlarged pulmonary artery, c) the tip of the left auricle and d) the left ventricle. The right border is usually more prominent than normal and smoothly rounded as a result of enlargement of the right auricle. The "combined" configuration is found in combined mitral and aortic valvular disease of rheumatic origin, but it may be simulated by auricular septal defect or Eisenmenger's complex.

The "pericardial" shape is found primarily in pericardial effusions but is commonly simulated by a dilated heart in advanced generalized myocardial failure, by myxedema and by beri beri heart disease. The heart takes on a "water bottle" shape. It is enlarged both to right and left and loses the normal convexities.

The observation of cardiac movement should include the rate, rhythm and amplitude of movement along the borders of the visualized chambers.

The rate of beat is, of course, considerably influenced by the emotional state of the patient, but the observation of change of rate with respiration or on holding the breath permits a simple but accurate determination of the presence or absence of normal sinus arrhythmia. The examiner may very accurately detect slight changes of both rate and rhythm by gently tapping out the visualized beats with his foot. The ventricular rhythm may be either regular or irregular. True irregularity is most commonly due to extra-systoles or auricular fibrillation. Apparent irregularity is due to diaphragmatic motion and can be excluded by having the patient hold his breath. Extra-systoles show a basic regular rhythm with occasional beats out of rhythm followed by a slightly longer latent period before onset of the next contraction. In fibrillation there is no detectable regular rhythm. Pulse deficit can be accurately determined by counting the pulse while visualizing the heart beat. The true time relations of the contraction of different chambers cannot be determined accurately and fluoroscopic observations are of little clinical value in verifying bundle branch block, increased a-v conduction time or auricular flutter.

The amplitude of cardiac pulsation along the visualized heart border may be increased, decreased, absent or paradoxical. In the a.p. projection the normal range of amplitude of contraction is four or five mm. on the left border by the left ventricle, and two mm. on the right border by the right auricle. Maximum cardiac pulsation should be seen at the apex of the heart in the left anterior oblique position with the patient rotated sufficiently so that the cardiac apex clears the spine. In this position it may vary from five to ten mm. partially due to rocking of the heart. The aorta will normally pulsate about two mm. between systole and diastole, best seen just above the right auricle on the right and at the level of the aortic knob on the left. The hilar vessels normally may have a barely perceptible pulsation, while the left hilum almost always shows a definite rocking motion en masse which is the transmitted pulsation from the heart.

Generalized increase in amplitude occurs in anemias of 50 per cent Hgb. or less, hyperthyroidism, neurocirculatory asthenia, a-v fistulas, patent ductus arteriosus, aortic insufficiency, etc. Good vagal slowing may persist in neurocirculatory asthenia, while it is usually absent in hyperthyroidism. It is important to recognize that in patent ductus arteriosus the increase in amplitude of pulsation characteristically involves the left ventricle, pulmonary artery and aorta. It may be most striking in the pulmonary artery.

Diminished amplitude of pulsation is due either to masking of the contraction by pericardial fluid, by diminution of contractility due to myocardial failure, or to hypertrophy of the myocardium as in most hypertensive hearts and some cases of coronary insufficiency. The thicker the left ventricular wall, the less apparent is the contraction of the myocardium peripherally when the chamber empties its contents. Thus an apparent sluggish contraction of the heart along the left ventricular border does not necessarily mean a failing heart as is often concluded. The clue lies in the comparison of the pulsation of the heart with that of the aorta during fluoroscopy. If the aorta shows normal or even increased pulsation with a diminished left ventricular amplitude, one may assume myocardial thickening or hypertrophy. If the aortic pulsation is simultaneously diminished the probability is that the poor heart beat is due to myocardial weakness. Actual myocardial infarcts are not demonstrable by fluoroscopy. Presumptive evidence of their presence is provided by the secondary changes recognizable in the heart or circulatory system. On rare occasions in massive infarction a paradoxical pulsation may be recognized in which a portion of the myocardium expands or bulges out during systole due to the local lack, or loss of, contractility.

Calcification within the heart is not rare. It may be recognized with a little experience if good fluoroscopic technique is observed. A small-focus fluoroscopic tube and fine screen such as Patterson Type B are necessary. The examiner's eyes must be completely dark-adapted and the heart area examined while the patient holds his breath, with the x-ray beam coned down to a diameter not exceeding five to six cm. Calcification may be of five types: myocardial, pericardial, coronary arteries, valvular and mitral annulus.

1). Myocardial calcification is rarely seen during life. When present it is almost invariably due to calcification in an old myocardial infarct. This occurs predominantly in the posterior heart wall.

2). Pericardial calcification occurs most commonly along the diaphragmatic surface of the heart and anteriorly over the right ventricle. It may, however, be of any degree and involve any area. Identified as flat or curved plaques over the periphery of the heart, they indicate adhesive pericarditis but do not necessarily indicate the clinical condition of constrictive pericarditis[3]. Half of the cases of constructive pericarditis do not have demonstrable calcification by fluoroscopy.

3). Calcified coronary arteries are recognized as short parallel segments of calcium deposits. These may be localized with considerable accuracy[4]. Their presence, however, merely confirms coronary arteriosclerosis and bears no known definite clinical correlation with coronary occlusion, infarction or angina pectoris.

4). The identification of cardiac valvular heart calcification definitely establishes the diagnosis of valvular heart disease, almost invariably rheumatic. Valvular calcification is usually punctate or conglomerate nodules of calcification which may be recognized deep in the heart by a rapid dancing "to and fro" or triangular motion during systole and diastole. Localization in the mitral or aortic valves is best done in the oblique positions[5]. True valvular calcification must be distinguished from the calcified annulus fibrosus of the mitral valve. This also lies in the mitral area and presents a gentle wave-like motion during systole and diastole.

5). Calcified mitral annulus, however, is usually larger, denser and is shaped like the segment of a circle or ellipse. It is presumably a senile change of no clinical significance except that it is frequently associated with a systolic murmur. It bears no relation to antecedent rheumatic fever.

Extra-cardiac changes may be extremely helpful in revealing the type, the physiological state and sometimes the duration of the cardiac abnormality. The lungs and pleura will reveal the signs of passive congestion of heart failure. The mildest degree of passive congestion gives the picture of simple vascular engorgement. Here the pulmonary vessels will be larger, increased in caliber with resulting increased prominence of hilar shadows. Further degree of failure in addition to enlarged vascular shadows shows haziness and irregular margins of the markings as transudative fluid seeps into the supporting tissue around the vessels. As this increases, transudative fluid will replace air in the alveoli and the pulmonary vascular markings by x-ray will become confluent shadows of increased density in the most dependent areas of the lung where the vascular stasis is most marked. At this stage there is usually sympathetic "weeping" of the pleura from relative vascular stasis and fluid will collect in the dependent portion of the pleural space producing a blunting of the costophrenic angles in the erect position. In long standing cases of pulmonary congestion due to mitral disease the red blood cells seeping into the lung parenchyma may break down and leave deposits of haemosiderin in the lung, producing a fine miliary mottling which may simulate miliary tuberculosis. Pulmonary edema may occur with vascular congestion or may occur entirely separately. This condition, being an out-pouring of transudative fluid from the vascular channels into the lung parenchyma, is usually seen in acute heart failure, such as myocardial infarction. As a matter of fact, in patients sick enough to require hospitalization for acute myocardial infarction, acute pulmonary edema with pulmonary vascular engorgement and congestion is the single most frequent finding, even more than cardiac enlargement. This is an important differential as edema may simulate pneumonia or pulmonary infarction.

Radiologically, pulmonary edema presents granular or confluent patches of increased density, but less dense than corresponding areas of consolidation. The distribution is usually bilateral and perihilar. Asymmetrical localized pulmonary edema may occur. This localization has been attributed to a locus minoris resistentiae, secondary to antecedent injury, presumably to the lymphatics. Any type of failing heart may produce pulmonary congestion and edema. The lower the serum proteins, the less the degree of failure necessary to produce the same changes. This accounts in part for the common occurrence of marked edema in acute nephritis and occasionally in beriberi heart disease, with relatively mild degree of permanent myocardial damage.

Among the important extra-cardiac x-ray observations which aid in cardiac diagnosis is the detection of concave notches on the lower borders of the ribs produced by the tortuous enlarged intercostal aretries of the collateral circulation in coarctation of the aorta. These notches are always bilateral and usually involve the lower borders of the third to ninth ribs posteriorly. Their presence is pathognomonic of coarctation of the aorta. The typical case will also show a moderately enlarged left ventricle, a widening of the supra-aortic shadow and lack of prominence of the normal aortic knob. The rib notches are rarely seen in patients below fifteen years of age as it takes some years for the erosion of the ribs to develop. X-ray is still responsible for the initial diagnosis in the majority of these cases.

As with coarctation of the aorta, it is now increasingly important to recognize and define other anomalies of the great vessels due to the possibility of successful surgical intervention with relief of symptoms. The more important of these are the double aorta or vascular ring and the anomalous subclavian artery. The vascular ring is a developmental anomaly in which two aortic arches develop, enclosing the trachea and esophagus and often resulting in respiratory stridor or dysphagia or both. A barium swallow will show a concave indentation in the esophagus posteriorly. The trachea will show a similar defect anteriorly at the level of the aortic arch. Lipiodol instillation into the trachea may be necessary to demonstrate the latter. This is not to be confused with the simple anomalous right aorta without the vascular ring. In this condition the single anomalous aorta passes either in front or behind the esophagus and then pursues a course to the right of the spine. If behind the esophagus it will produce a similar concave defect in the visualized esophagus, but it will produce no defect in the trachea. It also may give rise to dysphagia and at times not until late in life, presumably because the aorta becomes larger and more tortuous due to arteriosclerosis, thus increasing pressure symptoms. The aberrant right subclavian artery usually arises from the descending aorta on the left and passes obliquely upward to the right behind the esophagus, producing a characteristic oblique compression of the barium-filled esophagus.

Aortic aneurysms which are notoriously "silent" clinically, especially in the descending thoracic aorta, may readily be revealed by x-ray as an abnormal mass. The differential diagnosis from tumor, especially lymphoma, may be exceedingly difficult. Fluoroscopy is of relatively little value as the commonly described characteristic pulsations of aneurysms are not usually demonstrable, presumably due to the organized laminated blood clots lining the sacs which are almost always present. If calcification is seen in the wall, the diagnosis of aneurysm becomes apparent. A Bucky film of the chest may be required to demonstrate this. Dissecting aneurysms are not readily recognized by x-ray.

Finally, a valuable function of x-ray in the study of the heart is the detection of extracardiac conditions symptomatically simulating heart disease. A negative x-ray examination alone does not establish normality of the heart. However, in the absence of detectable heart disease, the recognition of an extracardiac condition simulating heart disease may launch the patient on the proper therapeutic course. This is perhaps the most rewarding pursuit of the radiologist in his approach to the cardiac patient. More than half of the patients sent to x-ray for cardiac examination are eventually found not to have heart diseases. In many the x-ray examination helps by detecting emphysema, carcinoma of the lung, mediastinal tumor, bronchiectasis, pneumothorax, gall stones, diaphragmatic hernia, or other conditions which are producing the symptoms simulating heart disease.

SUMMARY

The method of observation of the heart by xray is discussed. Deductions which may be based upon such observations are indicated.

In determining the position, size, and shape of the heart, x-ray yields the most accurate information of any method now available. The observation of cardiac movement gives information on the physiological state of the heart which may aid in, or establish, specific radiologic findings such as the diagnosis. Valvular calcifications, when observed and localized by x-ray, firmly establishes the diagnosis. X-ray as an additional method of study of heart disease may lead to a more accurate diagnosis and a sounder therapeutic evaluation of the cardiac patient.

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WHAT MONEY CAN DO

Money, no doubt, is a power; but a power of well-defined and narrow limits. It will furnish your table with luxuries, but not you with appetite to enjoy them. It will purchase plenty, but not peace. It will encompass you with flatteries, but never procure you one true friend; it will bribe for you into silence the tongues of accusing men, but not an accusing conscience; it will pay some debt, but not the largest one of all, your debt to the law of God; it will relieve many fears, but not those of guilt—the terrors that crown the brows of death. —GUTHRIE

Allergy as Applied to Ophthalmology and Otolaryngology

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For over one hundred years, doctors have written papers on allergy. The names it has been called are too numerous to mention—hayfever, vasomotor rhinitis, etc.—but so far no one has suggested a name acceptable to all that expresses the full meaning of allergy.

This disease is no respecter of age, person or race. It occurs in every race known to man and at every decade. Soon after birth infants develop it, and often a person seventy or more may have it. Generally speaking, males and females are affected about the same. It is variously estimated by many observers that from three to ten per cent of the entire population of the United States have allergy in some form. That means there are between four and twelve million people in our country who are sufferers of this dreaded malady.

One of our most valuable diagnostic aids in allergy is a good history from the patient. We ask: Has there been asthma, eczema or hayfever in your family? In babyhood, was it necessary to change your formula several times? If so, which foods disagreed with you, which ones seemed to agree with you? We inquire about the different diseases the patient may have had during childhood. At what age did he have eczema? Location of onset (town or country), how often symptoms were noted, etc. Present history: First of all, what time of the year do the symptoms begin and when do they end? If they begin in March or April and end in a few weeks, one would suspect trees or grass. If the symptoms begin in May or June and end at frost, one would think of pigweed or some of that group; but if they begin in August or September and end with frost, the ragweed group should be considered. If the symptoms are encountered the greater part of each year, one should consider food, dust, mold, some chemical, animal danders, face powder, rouge or lipstick. If it is dust, one can usually find that the patient has more symptoms if thrown in unusually dusty surroundings. On the contrary, if there are marked changes in the symptoms every time the weather makes a sudden change, they may be allergic to either heat or cold, light or some form of mechanical irritation. As the history is taken, one should always keep in mind the relation between the contacts, the season of the year, duration or time of these attacks. If, for instance, the patient skin tests to ragweed in March, one could not expect that to correspond to allergy in March; but if he had allergy at night only, one would suspect dust, mold, feathers or some of the bedding, and should the patient have a positive skin test to one of these, then one would feel justified in making a diagnosis. If the symptoms occur only in the day, something wherever the individual works or eats would be suspected. Since the advent of sulfonamides and penicillin, one must keep in mind allergy to one or both of these indispensable drugs. Has the patient ever had sulfonamides and penicillin in any form before? One should not be allergic without previous contacts. History of injury, operation or severe infection, because allergy often follows such a condition.

Symptoms: Nasal stuffiness, irritation, burning, itching, tickling, sneezing, rubbing of the nose, watery discharge which later becomes thick tenacious material with complete or almost complete blockage and excoriation of the nares. There is often associated burning, itching, photophobia, injection and watering of the eyes, edema of the lids, conjunctiva or corneal ulcers. May also have night and day headaches, itching with fullness in the ears, eczema behind them, burning to severe pain in the nasopharynx with more or less coughing. Generalized itching, malaise, feels hot, has asthma and often feels depressed. If food is the cause of the allergy, may have many and varied gastrointestinal symptoms as abdominal distress, nausea, diarrhea or headache.

Local Changes: Normally, the nasal columnar ciliated epithelium is covered by a thin mucoid sheath which is usually invisible to the normal eye; but may be seen if an attempt is made to remove some of it by use of suction. The normal color of the mucous membrane is bright pink to red. The nares are open and the turbinates have a firm regular appearance. In allergy, the mucoid secretion varies from thin watery to thick tenacious mucoid material. The turbinates are pale, edematous and boggy looking, often with one or more polypi in each side of nose. The blockage varies from mild to complete, depending upon the severity of the allergic attack. In between attacks, the structures in the nose return to normal; so one has to be careful in making or not making a diagnosis of allergy.

The Cytology of the Secretions: Hansel[1], reported a new polychrome stain technic with which one can stain a slide in about one minute. Hamrick[2] states that the point of emphasis is the microscopic examination of nasal secretion from every patient, acute or chronic, who is having nasal symptoms. As a rule one can secure enough material for microscopic examination by having the patient blow his nose in wax paper. If not, it may be obtained either by suction or lavage of one of the sinuses. Some of the material secured by one of these methods can be placed on a slide, stained and studied. Normally, the neutrophiles and eosinophiles run about 10-1. Eosinophiles in moderate to large numbers found in nasal and sinus secretion are positive proof of allergy. Their persistent absence is also proof that the patient does not have allergy. In acute infections, the stained nasal smears show complete or almost complete neutrophilic cells. If you should find both eosinophiles and neutrophiles it means you have both allergy and infection. It must however be remembered that in true infection, one may find a few eosinophiles scattered about over the entire slide; but experience will soon help one to correlate his laboratory findings, his physical and history to help make a diagnosis.

X-ray and Transillumination: Emphasis should be placed on transillumination or x-ray for every patient having nasal symptoms. Experience with transillumination will soon make one able to decide whether it is necessary to have an x-ray of the sinuses. Transillumination can best be done with a rheostat so that the light can be increased or decreased as one finds necessary. Better information is also obtained with illumination by some method where both antrums can be studied at the same time. This gives the examiner a direct comparison. If the patient is having an attack of allergy and the nose is closed from mucus, edema and swelling, the antrums will appear much darker. Grove[3] has suggested the injection into the antrum of colloidal thorium dioxide for x-ray of the sinuses. He states that it gives a clear, delicate outline of moderate thickening or slight polypoid changes, which are often obscured by iodized oil. He has found no untoward reactions from its use in seventy-five patients. He states that he has found it inexpensive, non-irritating, and non-toxic. He confirmed his findings in thirty cases by means of the Caldwell-Luc operation.

Bacteriologic Findings: In allergic cases, there are usually no significant bacterial findings. Bacteria are found as a rule when numerous neutrophiles are seen in the smear. If none are found on the slide, they can usually be cultured from the nasal or sinus secretion in non-allergic patients. In cases where there is blockage without proper aeration, one will usually find some form of pathologic bacteria.

Pathology: Hansel[4] lists the following pathological changes in allergy of the nose and sinus.

1. Thickening, hyperplasia and polypoid degeneration.
2. Eosinophilic infiltration of the tunic propia.
3. Edema, round cell infiltration and connective tissue proliferation.
4. Dilatation, compression and atrophy of glands.
5. Dilatation, thickening and compression of vessels.
6. Hyperplasia.

Diagnosis: Is there a family history of allergy in any form? Has the patient ever had eczema, hayfever, asthma, migraine or unexplained eye trouble, Ménière's disease, a detailed history of home, its contents, location of work, what factors surrounding the work which might cause or contribute to the allergy. A careful investigation of one's diet should be made and it is often necessary to give a non-allergic diet for a week to determine if food is the cause. History of sensitivity to heat, cold, light, drugs, vaccine and serums.

Examination: Look for pale, edematous, soggy turbinates covered with thick mucoid secretion and polyposis, swollen, eczematous eyelids, etc.; nasal and blood smears to determine the presence or absence of many eosinophiles; the scratch test for pollens, house dust and molds. If no information is gained by the scratch test, then one should do the intra-dermal tests with pollens. Accurate knowledge of plants and pollens. If one is interested in pollens, Wodenhouse has a good book on plants, the season of the year they pollinate. Intra-dermal tests for histamine, pollens, house dust, molds and foods. Patch test for wools, foods, cosmetics, etc. Transillumination and x-ray for cloudiness, hyperplasia and polypoid formation. Shambough[5] states that the proof of nasal allergy depends in the last analysis upon the therapeutic test. If removal of a specific substance relieves the symptoms and exposure to the substance then produces the symptoms and it does not produce symptoms in a normal individual, then we know that the patient is allergic to the substance.

Treatment: Many articles dealing with treatment stress first a change of climate. In our area, an average of nine out of ten patients can be given relief and stay at home. Rarely, it may be necessary for an occasional patient to change to another climate. Symptomatic relief can be had in some patients by the use of benadryl and elixir pyribenzamine. Elixir pyribenzamine is especially valuable in treating allergies to the sulfonamides and penicillin. Pyribenzamine seems the more useful of these two drugs. Hapamine and histamine have their place in the treatment of certain types of allergy but do not seem to have any place in treatment of hayfever or asthma. Part of the treatment consists in avoiding the responsible agent, leaving off the food, cosmetics, etc. If this is not possible or practical, one may attempt desensitization. At present, the build-up theory is being replaced for the newer low dosage suggested by Hansel: One should begin treatment with very weak dilution 1:200,000,000 to 1:100,000 using 0.20 cc. for the initial dose. Part of each dose should be injected intradermally, the rest subcutaneously. If the first amount given gives the desired relief, then one should maintain that dose—two times weekly at first, then once a week as soon as the patient can go that long. Ragweed cases are usually much more susceptible, symptoms more severe, require treatment with weaker dilution and more often. Some cases of ragweed require treatment every other day. If more of the serum is needed, increase the strength rather than build up the amount. It seems best to treat the patient according to the severity of the allergic disease rather than to go by the size of the skin test. The more severe the attack, the greater the dilution, 1:200,000,000. In the mild cases, one will often have to give a stronger dilution 1:100,000. There are three methods of treatment: preseasonal, coseasonal and perennial. For pigweed and ragweed, it seems the results are much better if one can begin treatment five or six weeks before the season begins, continue treatment until frost kills the weeds, then discontinue treatment for a while. Unfortunately for most of us, we do not see the patients until they can no longer endure their malady so one is forced to use the coseasonal method of treatment, which has proved for us the most dangerous. The perennial is necessary in many contacts as food, dust, mold, histamine, etc., except in a few select cases that get almost immediate and lasting relief from a few treatments of dust and mold. Some also prefer to give the pollens in small doses throughout the year while others prefer to stop treatment at the first killing frost. Dust and mold cases often have to be treated all the year. Credit should be given Wittich[6] for the discovery of mold mixtures in the old flour mills of his area.

Case Reports:

CASE NO. 1

Mrs. A.—female, age 29, seen June, 1943. Has had hayfever for past five years from May until frost. Tested 3XXX to pigweed, test; 1:100,000 dilution, June 17, 1943: 0.20 cc., June 19, 1943: 0.20 cc. Feels little better. June 22, 1943: 0.20 cc. No change, had hayfever; 1:10,000 dilution. June 25, 1943: 0.20 cc. June 29, 1943: 0.20 cc. Feels fine, nose wide open. July 3, 1943: 0.20cc. Still feels good. July 10, 1943: 0.20 cc. Hasn't had any hayfever. 0.20 cc. given weekly until frost. 1944, 0.20 cc. 1:10,000 dilution given two months, April and May, then quit. Been well ever since.

CASE NO. 2

Mrs. C., female, age 31. Seen August 2, 1945. "Day and night headache for nine months." Put on basic, non-allergic diet.

Headache left in six days. Intradermal tests for foods; negative. Histamine test; negative. Allergic foods added back one at a time. August 20, 1945: Eggs, added, had severe headache. August 26, 1945: Bacon added, had to give opiates to relieve headache. September 8, 1945: Therapeutic tests repeated with bacon and eggs. Had severe headache lasting fifty-two hours. Bacon and eggs left out of diet. No return of headache to present time.

CASE NO. 3

Miss L., female, age 32. "Day and night headache for two years." January 11, 1947: Tested 4XXXX to 1:10,000 histamine intradermal. 1:1,000,000 dilution. January 11, 1947: 0.20 cc. histamine, 0.50 cc. B. Complex. 1:100,-000 dilution. January 13, 1947: 0.20 cc. histamine, 1 cc. B. complex. Feels better. January 15, 1947: 0.20 cc. histamine, 1 cc. B. complex Free of headache. January 22, 1947: 0.20 cc. histamine, 1 cc. B. complex. Feels fine. January 29, 1947: 0.20 cc. histamine, 1 cc. B. complex. Has not had the headache. February 5, 1947: 0.20 cc. histamine, 1 cc. B. complex. Treatment discontinued.

CASE NO. 4

Mr. J. W. R., male, age 26. Repeated corneal ulcers for three years. Conjunctiva red and very thick. May 27, 1945: Tested 3XXX to histamine intradermal. Hapamine given. May 27, 1945: 0.10 cc. May 30, 1945: 0.20 cc. June 3, 1945: 0.30 cc. June 7, 1945: 0.40 cc. Eyes look much better. June 11, 1945: 0.50 cc. Corneal ulcers healed, conjunctival redness and thickness done. June 18, 1945: 0.50 cc. given weekly for six weeks. 0.50 cc. given.

CASE NO. 5

Mrs. Smith, female, age 57. Had asthma and hayfever for seven years. Has not been able to do any work for seven years, asthma too bad. May 6, 1946: Tested 3XXX to 1:10,-000 dust and mold. 1:1,000,000 dilution. May 6, 1946: 0.20 cc. May 7, 1946: 0.20 cc. May 8, 1946: 0.20 cc. Slept most of last night. 1:100,000 dilution. May 11, 1946: 0.20 cc. Felt worse past 36 hours. May 15, 1946: 0.20 cc. May 19, 1946: 0.20 cc. Felt fine since last visit. May 25, 1946: 0.20 cc. Not had any asthma, doing all my work again. June 2, 1946: 0.20 cc. Working every day. 0.20 cc. given weekly for four months. No return of symptoms to date.

CASE NO. 6

Mrs. D., female, age 35. "Hayfever from August to frost last six years." August 4, 1946: 4 XXXX to 1:2,000,000 Ragweed scratch test. 1:20,000,000 dilution. August 7, 1946: 0.05 cc. August 7, 1946: 0.10 cc. Marked reaction. 1:200,000,000 dilution. August 14, 1946: 0.05 cc. August 16, 1946: 0.10 cc. Feels some better. August 18, 1946: 0.20 cc. August 20, 1946: 0.20 cc. Marked relief, nose open. 0.20 cc. given every two to three days remainder of the season with good results.

SUMMARY

1. One should remember that a well-taken history is our one most valuable aid in determining the cause of allergy.
2. Skin test: Should be considered only as an aid to making a diagnosis. If a positive skin test does not correspond with the history, it should be ignored. A negative skin test does not prove the patient is not allergic.
3. Every patient with nasal symptoms should have a microscopic examination of some of the nasal secretion.
4. Perennial dust and mold cases of asthma often seem to get quicker and more lasting results from a few treatments.
5. Coseasonal treatment is the most dangerous but the one most often used due to the fact many more patients are seen during the hayfever season.

(7 point Bibliography on Allergy here)

DISCUSSION

Dr. D. W. Hamrick (Corinth)—I first want to thank Dr. Cotten for giving us one of the most practical and most logically presented papers on allergy that it has been my privilege to hear.

I will not presume to add to the paper, but would like to emphasize a few points not stressed in his presentation.

Hansel has emphasized the point that the term "desensitization" so generally applied to the allergenic therapy of allergy is a misnomer, since the injections of allergens into an allergic individual increases his tolerance for that specific allergen rather than desensitizing him.

As to dosage and the interval between injections: There are two schools of thought on the size of dosage. Hansel was the pioneer of the "low dosage" therapy in which extracts of allergens in high dilutions, 1:1,000,000 to 1:200,000,000, are given. He likes to term this "stimulative" therapy. Most of the internists who do allergy use dilutions from about 1:100,000 up to 1:10. The latter group push the allergenic extract to the limit of the patient's tolerance. The former group who subscribed to Hansel's method use the weakest dilution and the longest interval that will control the patient's allergic symptoms. The average interval at the beginning of treatment averages from four to seven days and is later spread out to one injection every three to four weeks. The size of the initial injection is on the average 0.20 cc. of 1:1,000,000 to 1:10,000,000 extract unless the patient is violently sensitive as brought out in one of Dr. Cotten's case reports of ragweed sensitivity in which the dilution is much higher. The point of emphasis it seems to me is that if the strength of the extract is too strong or the interval between injections too short and the patient has definite allergic symptoms following the injection, then that individual has probably been done more harm than good by the injection.

Children respond to allergenic therapy much more readily than adults, and it is in this group that the term "cure" can often be applied after therapy for a period of one to three years.

Again I want to thank Dr. Cotten for his excellent paper.

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Seventy-five Consecutive Hysterectomies

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THE purpose of this paper is not to present any scientific study, or to put forth any new theories, or even to advocate any pet methods of procedure in any type of hysterectomy, but rather to be introspective and "take stock", as it were, on the question of the removal of the uterus.

I should like to present a small series of hysterectomies, seventy-five, recent, consecutive cases, all private patients, done at the Methodist Hospital and the South Mississippi Infirmary in Hattiesburg, Miss., in approximately the past two years. I should then like to make some comments on my personal feelings with reference to this particular operation.

These cases are divided as follows:

1. Subtotal	47
2. Total	22
3. Vaginal	6

As to color:

1. White	70
2. Colored	5

As to age:

1. Youngest	25
2. Oldest	67(2)
3. Average	40—approximately

As to indications:

1. Fibroids	40 (53 1/3 %)
2. Extensive Cervical Pathology	20 (26 2/3 %)
3. Cancer of Fundus—as proved by diagnostic curettage	2 (2 2/3 %)
4. Miscellaneous — as uterine fistulae, prolapse, etc.	13 (17 1/3 %)

There were many other cases of disease involving the uterus, both the fundus and the cervix, that were treated by radium or deep x-ray or both, where hysterectomy was not deemed wise, as well as a goodly number of cases of menopausal bleeding where radium was used, following a biopsy of the endometrial scrapings.

You will note that over half of these cases were fibroids. These varied from the small submucous growth that produced excessive bleeding to the extremely large multiple fibroids of one negro woman who had the appearance of one at full term pregnancy.

All vaginal hysterectomies were in women from sixty to seventy years of age, with one exception who was forty-nine, and all had a definite prolapse of the uterus and bladder. All had extensive perineal lacerations also with large rectoceles.

You will note that there were only five colored patients in this series.

The question of age was quite interesting as one case of a total hysterectomy was only twenty-five years old. This was a young white woman who had been married twice, who had had one pregnancy that terminated in an abortion at three and one-half months, and who had had extensive and prolonged anti-luetic treatment. After an absence of several months she returned complaining of excessive and prolonged periods, and on examination a large opening through the posterior lip of the cervix was found; the opening was just anterior to the junction of the posterior vaginal wall and the cervix. The edges were raw in appearance and bleeding was very free. The uterus was larger than normal, and rather hard, A biopsy was done and the report was chronic cervicitis with erosion. Anti-luetic treatment was again pushed, but the lesion continued to get larger. After some weeks of active treatment without improvement a total hysterectomy was done and the pathological report was the same—chronic cervicitis with erosion. This patient has been well about a year.

Another total hysterectomy was in a woman twenty-seven years of age who was first seen seven (7) months after she had had a cesarean section. She was menstruating through a fistula in the lower end of a lower midline scar. She had evidently had an abscess in the prevesicle space following her section that had drained through the scars in the uterine and abdominal walls.

In sixty cases perineorrhapies were done at the time of the hysterectomy. In all abdominal cases both tubes were removed along with the uterus. In all women under forty years of age an effort was made always to leave at least one good ovary.This was in cases where malignancy was not proved or suspected. Where cancer had been proved prior to operation by a diagnostic curettement, both tubes and ovaries as well as the entire uterus were removed.

In women forty years of age or over, both ovaries were removed without hesitation, unless they were entirely normal.

In all cases except one, the appendix, if present, was removed. The one exception was in a woman sixty-seven years of age who had a gland cell carcinoma grade II of the fundus, found by diagnostic curettage. Her condition was fair only and since the appendix was of the small atrophic type, it was not removed.

The great majority of these patients were typed and crossmatched prior to surgery and most of them had at least one transfusion of 500 cc. of citrated blood during or immediately following operation. So far as convalesence is concerned, there has been no appreciable difference in the cases of total, as against the subtotal cases. The sickest case in the entire series was a woman thirty-eight years old who had a perineorrhaphy, bilateral salpingectomy and total hysterectomy. She developed a pyelitis that was difficult to control with both penicillin and sulfa drugs. At one time her temperature, by mouth, was 106 degrees. After her pyelitis was brought under control her convalescence was uneventful.

There were seven cases that drained from the incision due to local infections. These were all of minor importance and no complications as herniation followed in any of them. The abdominal cavity was not drained in any of these cases.

All cases were encouraged to move about in bed from the beginning, and those cases of the past year were put out of bed at a much earlier date than those of the first year. The average hospital stay was twelve days; this figure will soon be lessened considerably, however, for cases are now leaving the hospital at the end of one week as a general rule.

There were no deaths in these consecutive cases. There was no postoperative phlebitis, and only one definite case of postoperative pneumonia. There has been no known damage to bladder or ureters.

All cases have been followed, and with the exception of the usual mild vasomotor disturbance such as hot flashes and chilly sensations, all patients have made an entirely satisfactory recovery.

From the above statements, I think that it is evident that I have always tried validly to justify the removal of the uterus. In the twenty-odd years since I did my first hysterectomy I have had many questions to present themselves to my mind with reference to the removal of this organ. Some of the most pertinent of these are: 1) Am I fully justified in this operation, which authorities teach us has a mortality rate of 2 to 5 per cent, 2) Shall I do a total or a subtotal operation? 3) Is there some other way of improving this woman's condition, or perhaps effecting a complete cure without subjecting her to a radical operation?

It is my conviction that entirely too many hysterectomies are done and that we do not always have sufficient grounds to justify our actions. It is my feeling that a retrodisplacement of the uterus, or an occasional prolonged or slightly excessive menstrual period when a woman is approaching the menopause is not ample justification for a hysterectomy. If there is any doubt in our minds as to the pathology present, it is a relatively simple matter to do a diagnostic curettage or a cervical biopsy.

The old question of a total versus a subtotal operation is still worthy of comment. When you read the various texts on gynecology, almost without exception the statement is made that a subtotal operation is usually more preferable unless there is definite pathology of the cervix, or unless you are dealing with a known, or at least a suspected malignancy.

'Or on the other hand, present-day trends are definitely towards the total removal of the organ due to the fact that there is always the remote possibility of a malignancy developing in the remaining cervical stump. This incident is estimated variously by the different writers as anywhere between two and seven per cent, which from personal experience is rather high.

You will note from the above cases in this series there were forty-seven subtotal and twenty-two total operations. This expresses my feelings on this question, for I have been convinced that my patients, on very close follow-up, who have a healthy cervical stump remaining are somewhat more comfortable as the years pass, and that their marital relations are more satisfactory. So far as the ease and facility of the two operations and the mortality rates of the one as against the other, I do not think that there is any appreciable difference. My tendency to leave a large percentage of healthy cervices is prompted entirely by very close personal contact with private patients over a long follow-up period of time. I have the definite conviction that the woman who has a healthy cervix, but needs a hysterectomy for some good cause has a brighter and more comfortable outlook in the future if the cervix is left intact.

For many years I have used radium for menopausal bleeding, where the uterus is apparently healthy, and there is no other indication to open the abdomen. Many of these patients treated in this way are the most grateful and appreciative patients a doctor could wish to have.

I would like so much to stress the importance of two measures that are so very helpful, but that are so sadly neglected; these are cervical biopsy and diagnostic curettage. I think it is our solemn duty to our patient to use one or both of these measures whenever they are indicated. Many patients in this series had one or both of these measures carried out prior to operation.

SUMMARY

I. Seventy-five, recent, consecutive hysterectomies in private patients are presented.

II. I have tried to justify fully the removal of the uterus in all cases. Many cases that could have been subjected to hysterectomies were treated by other less formidable measures with good results.

III. The majority of the abdominal hysterectomies were of the supravaginal type, since it was my feeling that these patients have a better outlook on life and are not subjected to the hazards of ureter and bladder damage nor to structural changes in the vagina.

IV. Despite the fact that preoperative diagnostic curettage where indicated, and postoperative pathological studies on all specimens was done, the incident of cancer was exceedingly low.

V. All patients had laboratory work prior to surgery and most of them were typed and crossmatched for blood.

VI. Penicillin and the sulfonamides were used very freely both pre- and postoperatively.

VII. Early mobilization as well as early ambulation was stressed and practiced.

VIII. No serious major complications were encountered in any of these cases. There were no deaths.

DISCUSSION

Dr. V. B. Philpot (Holly Springs) — In keeping with Dr. Culpepper's method of reporting his series, I am giving you a similar one, smaller in number, however, covering only a year's period of operation at the North Mississippi Hospital at Holly Springs. This institution having been in operation only a year, the records of this series are the only ones of my own to which I now have access.

These cases are divided as follows:

1.	Subtotal	30
2.	Total	18
3.	Vaginal	0
	Total	48

As to color:

1.	White	20
2.	Colored	28

As to age:

1.	Youngest	23
2.	Oldest	67

As to indications:

1.	Fibroids	20
2.	Extensive pelvic complications and cervical pathology	25
3.	Carcinoma	1
4.	Endemetriosis	2

You will notice that "other pelvic pathology" is given as an indication for hysterectomy in about half of my cases; these being mainly Negro women who had almost every kind of pelvic infection possible for patients to have, pus tubes, multilocular cysts, metritis, etc., in all the stages of inflammation.

There were no deaths in our series. Now, this nil, or low, death rate in such cases, now possible everywhere, would not have been possible a few years ago, or before the advent of penicillin and sulfa drugs. Also, I am sure the technique of all of us has improved as the years have gone by. In fact, about ten years ago, if I am not mistaken, the death rate for total hysterectomy was about twice as high as subtotal and even the subtotal death rate was some 2 or 3 per cent. Today, as Dr. Culpepper has stated, there is very little difference in the mortality rate of these two procedures, and, as further stated by him, the condition of the cervix should be our guide in deciding which to do; when the cervix is in bad condition from any cause, do a total hysterectomy, otherwise subtotal.

Dr. A. Street (Vicksburg) — There is just one thing that comes to my mind when determining the extent of the operation to be used. Of course, we have the scientific considerations—the age of the patient, the interference with the normal functions of the organs involved, and the desire to avoid removal of normal organs. The other consideration is the mental attitude and reaction of the patient. Following recovery from operation, we certainly do not want a dissatisfied patient. Occasionally, a patient develops so strong a rebellious attitude toward what has been done that she develops obsessions based upon the operative procedure, which may build up into a serious mental disorder. In order to avoid such mental sequelae, I have found it wise to talk to the patient before operation and to discuss facts concerning her condition and the probable procedure necessary at operation. Then, regardless of age and extent of operation and disease found present, she is more liable to be coöperative afterwards because she has had a chance to agree or disagree with the proposed plan. This preoperative discussion is especially valuable when dealing with endometriotic lesions in fairly young patients. If both ovaries are not removed at operation, recurrent endometriosis may develop later on. In more than one case suspected of having endometriosis, I have explained to the patient before operation that if any ovarian tissue is to be left in, she may have trouble later on and may require surgery again. Some patients accept that possibility and prefer incomplete operation. Others object to any avoidable risk of again requiring surgery.

I prefer removing the cervix at the time the fundus is removed.

I have had a patient to come in six or seven weeks following supravaginal hysterectomy, and on examination find cancer present in the cervix. The treatment of cancer in the residual cervical stump is more difficult and less efficient than if the fundus had not been removed. Annual examination of patients having residual cervical stump is an important safeguard.

To achieve success not by heritage but by individual effort is the greatest joy of life.
—J. P. MORGAN

The Mississippi Doctor

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Address all material for publication to W. H Anderson, M.D., Booneville, Mississippi.

Editorials

The entire membership of the Mid-South Postgraduate Medical Assembly is deeply grieved over the sudden death of its very popular, deserving, and beloved president, Doctor J. C. Pennington, of Nashville, Tennessee, who genuinely loved this association. He did much for organized medicine, and was always vitally interested in the Mid-South. He was a most lovable man, very kindly of heart, and friendly without affectation. He was a great man to know and to have as a friend. He will be with us in spirit and would expect us to go forward joyously.

Vice-President L. S. Nease of Newport, Tennessee, will preside over the meeting as president, and at the close of the session Doctor Frank Acree will become president.

You will note, elsewhere in the *Journal*, Dr. Pennington's statement regarding the coming meeting of the Mid-South Postgraduate Medical Assembly in February.

You will note the program of the Mid-South furnished us by Dr. A. F. Cooper, the executive secretary. Make your reservations and plan now to attend.

The next meeting of the Northeast Mississippi Medical Society will be held in Houston, which has been a medical center for many years. There the spirit of W. C. Walker still lingers and there lives the beloved Dr J. Rice Williams who is still active in practice and who is a prominent member of the Half Century Club. It will be good to attend the meeting in Houston in January.

The Southern Medical in Baltimore, Nov. 24-26, was mighty good. Dr. Elmer Henderson presided ably as president. The public meeting was unusually timely, the scientific sessions up to par, the fellowship fine, and the medical atmosphere of Baltimore most invigorating. The learned Dr. Lucien LeDoux of New Orleans takes over as president, Dr. Hunter of Washington steps up to president-elect, and the able and deserving Dr. Hamilton McKay of Charlotte, North Carolina, is first vice-president. The fellowship in the Southern seems always to be the very best.

For about forty-four years our state has had a fine two-year medical school. Reason and good judgment indicates now that we should go to a four-year school. Under our hospital plan, all the clinical material in the state would be in a certain measure available for clinical material. Our state is short about forty per cent in doctors against the United States at large half this much. The United States is now the leader of the world in medical education. We must educate our own doctors and be liberal enough to take some from the foreign countries. Thus far we have been able to get back to our state two out of five who go out to complete their medical degrees. If trained in our state under an affiliated system of hospitals, taking part training as interns in the smaller institutions and some in the central or teaching hospital, our young men will be better equipped to practice in our state and more of them will no doubt remain for home service. The clock has struck and the time is at hand for action. Let us make ready our four-year school to be the heart and the soul of our medical service to the people through an unexcelled system of hospitals.

SOUTHEASTERN SURGICAL CONGRESS

You will read the following from Dr. Acuff, president of the Southeastern Surgical Congress, with pleasure. This organization, growing very rapidly and serving a great purpose, is reaching the rank and file of surgeons who are really doing the work and it is doing a fine job of improving them. Dr. Acuff is one of the outstanding dynamic powers in organized medicine in this nation, especially in the field of surgery. He is a thinker with great ability in practical application.

The idea of Dr. Acuff to have a home for the Southeastern Surgical Congress seems to be a good one. Atlanta, where its able secretary-manager is located, might be the logical place for this. Think seriously about the home for the Congress and write our able president at Knoxville, Tenn.

GREETINGS FROM DR. HERBERT ACUFF:

The Southeastern Surgical Congress offers a challenging opportunity for surgeons of the South. It is our organization. Let us think of it seriously. Let us support it. Let us make it grow.

According to our present form of increasing membership, the prospective candidate must be invited to submit his application. Won't you think of those in your city who are available and extend this invitation at once? You will endear yourself forever to such a surgeon. Application should then be sent to the chairman of your executive committee who will evaluate it and pass to the executive council for final approval.

The meeting at Hollywood Hotel, Miami Beach, Florida, April 5 through 8 bids fair to have the largest class ever inducted. This will be an impressive convention. Make your reservations early.

The *Southern Surgeon* must have greater circulation before it can attract national advertisers. Let's bring this up by increasing our membership and by making a non-member friend a Christmas present of the journal for a year.

I am still interested in a home for the Congress. If you have not expressed your opinion, I should appreciate your thoughts on this project.

BOOK REVIEWS

INFANT NUTRITION, by J. C. Jeans, M.D., Professor of Pediatrics, College of Medicine, State University of Iowa, and Williams McKim Marriott, M.D., late Professor of Pediatrics, Washington University of Medicine, St. Louis. Fourth edition. Published by C. V. Mosby Company, St. Louis, Mo. Price $5.00

This excellent and well written book accomplishes in 516 pages what most general practitioners seek in present-day knowledge concerning the nutritional requirements of infants under normal and pathological conditions and evidences of failure to meet these requirements. This last edition includes the advances, important new information regarding the nutrition of infants. Additions, changes, revisions and illustrations bring the book up to date in techniques and procedures. Useful to student and practitioner alike, *Infant Nutrition* is a first-class office aid and digest on the subject. Special consideration is given the chief gastrointestinal disturbances of infants—vomiting, diarrhea and constipation, which present such baffling problems of diagnosis and treatment.

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140 MILLION PATIENTS, by Carl Malmberg, Public Relations Adviser and Information Specialist for U. S. Public Health Service. Published by Reynal and Hitchcock, Inc., 8 West Fortieth St., New York 18, N. Y. Price $2.75 242 pp.

How good is the health of the American people? How good is the medical care most of them receive?

140 Million Patients answers these questions and many more about health and medical care. Furthermore, it shows how the health of the nation could be improved.

140 Million Patients takes the reader behind the scenes—in the doctor's office, in the hospital and in the operating room. The picture revealed is not a pretty one. It is, however, one that has long been familiar to physicians and surgeons, and one that many of them would like to see changed. Above all, it is one that the general public is entitled to know about.

In this book the doctors themselves take the witness stand to show what the patient does not know can, and often does, hurt him.

The basic theme of 140 Million Patients is that American medicine is not measuring up to its great potentialities. Putting modern scientific knowledge to wider and better use would mean a better deal for the individual patient and a stronger, more secure, more prosperous nation. 140 *Million Patients* shows how it could be done.

EDITORIALS
(Continued)

The Blue Cross Insurance Plan is now in action in our state and in Arkansas, making it one hundred per cent in the United States, all the states now participating. Dr. Edd Carey of Dallas, Texas, a native of Alabama, our outstanding medical statesman, deserves much credit for this organization. We believe this plan of insurance is going to serve a great purpose in our state. Both the medical profession and the hospital organizations should fall in line and push it right along. It has a definite relation to our fine hospital organization.

News and Comment

COMMITTEE ON GENERAL ARRANGEMENTS 1948 MISSISSIPPI STATE MEDICAL ASSOCIATION

GENERAL CHAIRMAN—Dr. Stirling S. McNair; EX-OFFICIO MEMBER—Dr. John B. Howell; HONORARY GENERAL CHAIRMEN—Dr. J. W. Barksdale, Dr. W. B. Dobson, Dr. Hardie Hays, Dr. C. F. McKenzie, Dr. S. H. McLean, Dr. G. W. Rembert, Dr. H. R. Shands, Dr. F. J. Underwood, Dr. J. P. Wall, Dr. N. C. Womack, Dr. G. E. Adkins, Dr. B. J. Marshall, Dr. Harvey Garrison, Sr., Dr. R. N. Whitfield, Dr. J. C. Walker, Dr. N. J. Milstead; VICE-GENERAL CHAIRMEN—Dr. Robin Harris, Dr. A. G. Wilde, Dr. A. E. Gordin; EXECUTIVE COMMITTEE—Dr. Stirling S. McNair, chairman; Dr. J. G. Thompson, Dr. D. W. Jones, Dr. T. E. Wilson, Dr. J. B. Howell; SECRETARY—Dr. T. E. Wilson, Dr. A. G. Ward; FINANCE—Dr. D. W. Jones, chairman; Dr. J. G. Thompson, Dr. Brister Ware; WOMEN'S AUXILIARY—Mrs. T. E. Wilson, chairman; Mrs. Walton Lipscomb, sub-chairman; PROGRAM—Dr. H. C. Ricks, chairman, Dr. A. L. Gray, sub-chairman, Dr. L. B. McCarty, Dr. T. A. Baines, Dr. M. L. Batson, Dr. Max Berman, Dr. J. F. Armstrong; MEMBERSHIP—Dr. R. C. O'Ferrall, chairman; Dr. Byron Alexander, sub-chairman, Dr. J. B. Johnson, Dr. B. N. Walker, Sr., Dr. Francis Berry, Dr. R. L. Bethea, Dr. T. H. Blake; RADIO—Dr. George Owen, chairman; Dr. Ruth Burroughs, sub-chairman, Dr. G. C. Russell, Dr. F. G. Bratley, Dr. I. C. Huggins, Dr. T. D. Brock, Dr. J. S. McIntosh; ALUMNI REUNION—Dr. Gordon Dees, chairman, Dr. N. F. Kendall, sub-chairman; Dr. O. A. Schmid, Dr. Van Dyke Hagaman, Dr. Estelle Magiera, Dr. Lynn Abernathy, Dr. J. A. Milne; SCIENTIFIC EXHIBITS—Dr. R. B. McLean, chairman; Dr. A. J. McIlwain, sub-chairman, Dr. S. W. Coley, Dr. H. B. Cottrell, Dr. J. S. Rude, Dr. E. A. Crawford, Dr. C. G. Callender; HOBBIES—Dr. W. H. Simmons, chairman, Dr. Chas. H. Ward, sub-chairman, Dr. T. H. Eddleman, Dr. T. M. Moore, Dr. Cecil Walley, Dr. W. E. Noblin, Dr. W. C. Thompson; PROPERTY—Dr. L. T. Carl, chairman, Dr. C. E. Lewis, sub-chairman, Dr. Frank Werkheiser, Dr. E. A. Copeland, Dr. George Riley; ENTERTAINMENT—Dr. Temple Ainsworth, chairman, Dr. W. A. Smithson, sub-chairman, Dr. Frank Wood, Dr. W. E. Lotterhos, Dr. J. E. Wadlington, Dr. W. J. Witt, Dr. B. N. Walker, Jr., Dr. G. W. Twente; HOTEL—Dr. L. W. Long, chairman, Dr. Boyd Edwards, sub-chairman, Dr. C. C. Smith, Dr. O. P. Myers, Dr. R. H. McArthur, Dr. Edward B. Werkheiser, Dr. J. T. Weeks; PUBLICITY—Dr. Harvey Johnston, chairman, Dr. Eva Meloan, sub-chairman, Dr. D. R. Post, Dr. L. P. Crull, Dr. W. M. Dilworth, Dr. H. F. Magee, Dr. L. E. Deddens; LUNCHEONS—Dr. H. F. Garrison, Jr., chairman, Dr. James Chustz, sub-chairman, Dr. R. F. Grendell, Dr. L. R. Reid, Dr. J. L. Spencer, Dr. F. D. Hollowell, Dr. Walton Lipscomb; INFORMATION—Dr. W. F. Hand, chairman, Dr. J. L. Davis, sub-chairman, Dr. T. S. Robertson, Dr. J. W. Dugger, Dr. Peyton Graves, Dr. D. V. Galloway, Dr. S. J. Hooper; TRANSPORTATION—Dr. W. L. Hughes, chairman, Dr. Lee Lipscomb, sub-chairman, Dr. Virginia Howard, Dr. R. W. Hall, Dr. T. E. Ross, Dr. W. H. Hall, Dr. N. C. Knight.

OLE MISS NEWS

The newly completed Medical Auxiliary Building, located just behind the hospital, a compact little building of concrete blocks, designed by staff members and Dr. Pankratz, dean of the medical school, makes effective use of every available bit of space. In the front (east) end will be located the clinic for use of Dr. Vernon B. Harrison, head of the Student Health Service; in the center are two classrooms, separated by folding doors, which may be opened to convert the area into one large classroom; at the west end of the building are two research laboratories.

Dr. T. J. Brooks' class in parasitology was the first group to meet in the new quarters. Just how badly the Medical School is in need of space may be observed from the fact that desks and chairs are stacked all over the basement of the hospital; supplies and equipment have to be stored in the corridors. This little building will relieve some of the congestion, but at best it is only a token of what the Medical School really needs.

Dr. Harold W. Brown, head of the School of Tropical Medicine of Columbia University, began a three-day series of lectures at the University of Mississippi early in December on hookworm, dysentery, and other diseases peculiar to this section.

Dr. Brown is noted for his discovery of **hexylrescorcinol** as the recognized drug in the standard treatment for hookworm. He developed this drug while on the staff of the Vanderbilt University School of Medicine where he received his M.D. degree. Dr. Brown's lectures, to Ole Miss medical and pharmacy students and physicians in this vicinity, will supplement a course in parasitic diseases taught in the School of Medicine by Dr. T. J. Brooks, Jr.

The present course in parasitic diseases is offered as a part of the medical curriculum for the first time this year although some work in the field has previously been given in bacteriology courses. Plans to establish a Department of Parasitology and Preventive Medicine next year have already been announced.

DR. GRAY TO PARKE-DAVIS

Announcement that Dr. J. P. Gray, well-known Hopkins graduate, public health man and educator, has joined the staff of Parke, Davis and Company in the capacity of medical consultant to the Sales and Promotion Division has been made by Harry J. Loynd, vice-president of the Company.

ANNOUNCEMENT

Willard Lee Waldron, M.D., announces the opening of an office for the practice of psychiatry at 950 North State Street, Jackson, Mississippi.

HIS LAST MESSAGE

As president of the Mid-South Postgraduate Medical Assembly, I wish to call your attention to the fine program arranged for you at the coming meeting, February 10-13, 1948. The Mid-South is a great medical organization, reviewing medicine and surgery in an intensive course of lectures of four days and nights. You will find the meeting very profitable, and the fellowship will be fine, as it always is. We consider it a great honor and a wonderful privilege to serve as your president. We are grateful to the program committee for arranging such a fine course of lectures on so many important subjects. The meeting is, as usual, at the Peabody Hotel. one of the South's bery best. Engage your room at once if you have not done so. For your good and for my pleasure, we hope to see a fine attendance at the coming meeting. It will be good to see the past presidents and have them as my guests at the annual banquet also.

Wishing for you a Happy Christmas, a successful New Year, and hoping to see you in February at the fifty-ninth session of the Mid-South Postgraduate Medical Assembly in Memphis, I am

Yours very sincerely,

J. C. Pennington,
President, Mid-South Postgraduate Medical Assembly.

MIDWINTER SEMINAR IN OTOLARYNGOLOGY AND OPHTHALMOLOGY

This year the University of Florida Midwinter seminar in otolaryngology and ophthalmology will be held at the Flamingo Hotel in Miami, beginning on January 12 and continuing through January 17, 1948. The lectures in otolaryngology will be presented on the twelfth, thirteenth and fourteenth, and those in ophthalmology on the fifteenth, sixteenth and seventeenth. The registration fee is $25.

FILE APPLICATION

State Medical Education Board offices in Jackson called attention to the deadline of December 20 for receipt of applications for loans to become effective in February, 1948. December 20 is the deadline date for receipt of all applications for mid-year loans; January 8 for receipt of all credentials for all applications from mid-year applicants.

FIRST IN RURAL PRACTICE

First young physician to complete medical school training under Mississippi's medical education program has entered general practice in an approved rural area. Dr. Lloyd N. Broadus is now practicing at Purvis, where he grew up.

ANNOUNCEMENT

Guy T. Vise, M.D., wishes to announce to the medical profession the opening of the Vise Clinic in the new Vise Clinic Building, Meridian, Miss.

Deaths

DR. A. L. NASON

Dr. Albert L. Nason, prominent retired physician of Darling and Quitman County, died after three weeks' illness at the Baptist Hospital in Memphis, Oct. 27. He was 77.

Dr. Nason was born in Choctaw County, Miss. He married the former Miss Ila Ramsey of Mathiston in June of 1897. Dr. Nason practiced medicine in Mathiston, Maben and Darling, where he and Mrs. Nason have made their home for the past thirty years. They celebrated their Golden Wedding Anniversary at their home in Darling in June of this year.

Earlier in life he was an active member of the Tri-State Medical Association and the Masonic Lodge. He was an active member of the Darling Methodist Church.

Dr. Nason is survived by his wife, Mrs. Ila Ramsey Nason of Darling; three daughters, Mrs. L. B. Owings of Parkin, Ark., and Mrs. James N. White of Belen, who are twins, and Mrs. Hassel Smith of Oxford. Three grandchildren, William David Jumper of the Navy, Andrew Albert Jumper of the Coast Guard, and Miss Anne Newton White of Belen; the great grandchild is Miss Patricia Anne Jumper of Philadelphia, Pa. Also surviving are two brothers, T. G. and R. E. Nason of Ackerman, and one sister, Mrs. Emma Nason Terry, also of Ackerman.

DR. J. C. PENNINGTON

Services for Dr. Jefferson Cumley Pennington, 55, prominent urologist, were conducted December 8.

Dr. Pennington died at General Hospital of coronary thrombosis.

A nationally known urological surgeon and one of the founders of the Southeastern Urological Association, Dr. Pennington was also a fellow in the American Medical Association, a member of the American Urological Association, the Southeastern Surgical Congress, the International College of Surgeons and Alpha Omega Alpha, honorary medical fraternity.

His widow, Dr. Edna Scott Pennington, to whom he was married in 1924, survives. His mother, Mrs. Fannie Howle Pennington of Rockford, Ala., also survives as do three sons, Jefferson Cumley, Jr., and Thomas Guy, both students at Vanderbilt School of Medicine, and William Scott, a student at the University of Tennessee School of Medicine, Memphis.

Dr. Pennington interned at Carson Peck Memorial hospital, Brooklyn, N. Y. He was attending surgeon at the Coney Island Hospital, New York, assistant resident surgeon and later resident surgeon at the Brady Urological Foundation of the New York Hospital, New York.

Dr. Pennington moved to Nashville in 1927. He was a member of the staffs of St. Thomas, Protestant and Vanderbilt hospitals. He was also interested in General Hospital where he was chief of the urological service and a member of the hospital's cancer clinic.

He was a member of the board of directors of the Nashville Academy of Medicine, a delegate to the Tennessee State Medical Association, a member of the Nashville Executives Club, the American Legion, "40 and 8" and a former member of the Optimist and Civitan clubs. He was a member of the Baptist church.

DR. C. E. SPENCER

Services were held from the Verona Methodist Church at 10:30 a.m. for Dr. Charles E. Spencer of Verona, retired physician, who died September 20. He was 63.

Dr. Spencer was born in Pittsboro (Calhoun County). He was a graduate of Mississippi A. and M. College and received his medical degree from Vanderbilt University in 1907. He practiced medicine in Verona from 1907 until two years ago when he was forced to retire because of poor health.

For many years, Dr. Spencer was active in the Masonic Lodge and civic affairs. He served as a captain in the Medical Corps during World War I.

Dr. Spencer leaves his mother; his wife, Mrs. Joan Bell Spencer; a son, Charles E. Spencer, Jr., of Verona; two daughters, Mrs. W. P. Cheek, Jr., of Verona, and Mrs. C. W. Aldridge, Jr., of Nashville; two brothers, Dr. Shelby C. Spencer of Waco, Texas, and Sidney B. Spencer of Bogue Chitto, Miss.; two sisters, Mrs. George Archer of Greenville, and Mrs. Elbert White of Corinth; a granddaughter, Joanna Cheek of Verona.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

Sulfadiazine Prophylaxis In Children and Adolescents with Inactive Rheumatic Fever—Janet S. Baldwin, Bellevue Hospital and New York University, New York, N. Y., Journal of Pediatrics 30:284-88, March 1947, and Quarterly Review of Pediatrics, Vol. 2, No. 3, August 1947.

"This is an analysis of two years' experience with sulfadiazine given prophylactically to a group of inactive rheumatic fever patients under the care of the Bellevue Children's and Adolescents' Cardiac Clinics. A sulfadiazine-treated group and a control group were evaluated before selection for study in order to rule out rheumatic activity. Both groups were balanced as to sex, age, years since last rheumatic attack, number of previous attacks, and type of cardiac diagnosis. Each group consisted of 51 individuals, representing 87 patient years each.

"Treatment consisted of 0.5 gm. sulfadiazine once daily to patients weighing less than 110 pounds; patients over 110 pounds received a similar dose twice daily. One 33-pound-child received 0.25 gm. once a day. Blood sulfadiazine levels averaged between 1.0 and 3.5 mg. per cent.

"Patients were checked frequently for toxicity and rheumatic recurrence. Sulfadiazine treated patients were examined weekly for seven weeks, then less frequently. Routine hemoglobin, total white count, differential count, and urinalysis were done at each visit for the first eleven weeks and every three months and more often whenever rheumatic activity was suspected.

"No evidence of toxicity required permanent cessation of treatment was encountered in the group of treated patients. Dizziness and fatigue early in the treatment period occurred once and subsided without withdrawal of drug. The white count never fell below 4,000 or the polymorphonuclear count below 38 per cent. Renal complications were not encountered.

"Recurrent active rheumatic fever occurred in one case in the treatment group as compared to seven cases (six definite, one probable) in the control group. The difference in recurrence rates between the treated and control groups is thought to be statistically significant. The low recurrence rate in the control group is explained as related to a low general incidence of rheumatic activity during the same time interval."

COMMENT: This is quite an interesting article on this subject. The experience of the author corresponds favorably with that of ours, and we can heartily commend this article to the profession in our state. Two objections to prolonged sulfonamide prophylaxis have frequently been expressed. In the first place, some observers have feared the development of severe reactions after prolonged administration of the drugs. These reactions have not been important in the reports obtained from civilian or military institutions where such prophylaxis was carried out, nor have sensitivity reactions, such as those obtained experimentally. Secondly, the possibility of producing sulfonamide-resistant strains of streptococci by prolonged giving of small doses of sulfonamides has been suggested. In isolated individuals, such as those considered in this article, this does not appear to be of importance though in large relatively closed populations where an attempt is made to treat the entire population, this may constitute a distinct hazard. Since other anti-streptococcal substances are available, however, the potential development of sulfonamide-resistant strains should not necessarily constitute a contraindication to prophylaxis.

CANCER RESEARCH

Dr. R. A. Street, Jr.

The following are conclusions drawn from reviewing the literature and the original work done by E. H. Reinhard, M.D., Carl V. Moore, M.D., Olga S. Bierbaum, B.S., and Sherwood Moore, M.D., of Washington University, St. Louis. Their work was published in *The Journal of Laboratory and Clinical Medicine*, Vol. 31, No. 2 pages 107-218, February, 1946.

1. Radioactive phosphorus is probably the best therapeutic agent available at the present time for polycythemia vera. Complete hematologic and almost complete symptomatic remissions can be produced with P32 in the vast majority of patients, and remission from a single course of treatment may last for from six months to several years or longer. It is not possible at present to evaluate the effect of radioactive phosphorus therapy on the duration of life of these individuals.

2. Therapy with P^{32} has very little effect on the clinical course of patients with acute or subacute myelogenous lukemia but produces at least as complete clinical and hematologic remissions as x-radiation in the chronic form of the disease. Freedom from radiation sickness is a practical advantage which patients who have had previous x-ray therayy appreciate. The duration of life from the first symptom until death of the patients treated at the Millinckrodt Institute of Radiology suggests that P^{32} therapy prolongs life to approximately the same extent as does x-ray therapy (about six months).

3. In the great majority of patients, the clinical course of acute lymphatic lukemia is not favorably influenced by P^{32} is probably as satisfactory as, but no better than, roentgen radiation.

4. Radioactive phosphorus is of no value in the treatment of monocytic leukemia.

5. Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma, and multiple myeloma do not respond as favorably to P^{32} as they do tox-radiation.

6. From observations on the few patients who have been treated there is no reason to believe that P^{32} is a satisfactory therapeutic agent for the treatment of lymphoepithelioma, malignant melanoma, carcinoma of the gall bladder, carcinoma of the breast, Ewing's tumor, mycosis fungoides, or xanthomatosis.

7. In patients with all the various types of diseases which have been treated, P^{32} has been shown to have a profound effect on the bone marrow, and severe leucopenia, thrombocytopenia, and anemia may occur as complications of the therapy. There is wide variation in the dosage of radioactive phosphorus required to produce these complications in different individuals. When more than one of the cellular elements of the marrow were depressed in the same individual, the cytologic changes in the peripheral blood usually occurred in the following order: the leucocyte level decreased first, the thrombocyte level second, and the erythrocyte level was affected last.

8. In patients with any type of chronic leukemia, roentgen radiation is more effective in some cases than P^{32} in bringing about a rapid reduction in the size of the spleen or lymph nodes. Therefore, x-ray should be employed whenever the prompt reduction of nodes or the spleen is necessary to relieve symptoms or remove pressure on some vital organ. X-ray may be used to supplement the radioactive phosphorus therapy for this purpose.

We have had no experience with the use of urethan in treatment of acute leukemia.

The intellect is like a telescopic searchlight by which we search the worlds of literature, music, art, true science, true philosophy for the materials out of which to build our paradise, within the empire of our soul.

State Board of Health

Felix J. Underwood, M. D.

MOUTH HEALTH PROGRAM, 1945-1947

Gladys Eyrich, Supervisor

Mississippi's mouth health program was twenty-four years old in January. The past two years have been the most productive of the period. The high cost of dental neglect pointed out by America's wartime experience and an increased consciousness of the important part that dental health plays in general health and fitness accounted for some measure of the added activity. Other reasons for the upward swing were the return of dentists from the armed forces, better economic conditions, an increase in dental funds for indigent children, the assistance of a district dental adviser with the United States Public Health Service, the stimulation of dental workshops and other dental meetings.

Objectives new or continued were: 1. to stimulate county health department dental programs; 2. to learn the rate of dental caries and dental care in the age groups 7-16 inclusive; 3. to start a study on the effectiveness of topical applications of sodium fluoride to the teeth; 4. to increase the number of dental hygienists.

Correction of dental defects received major emphasis for several reasons: 1) Dental caries is almost universal; 2) There is no specific to prevent the disease, therefore frequent and complete dental care starting in early childhood is the most effective procedure public health dentistry offers at the present time for the maintenance of healthy mouths throughout life.

Sixteen schools reached 100 per cent in dental corrections: five in Greenville, three in Clarksdale, two in Laurel, two in Vicksburg, one in Leland, one in Meridian; and two state institutions in Jackson, the School for the Blind and the Methodist Home. This is the largest number of schools to attain 100 per cent in dental corrections since the biennium of 1933-1935. Greenville and Clarksdale deserve special mention. In Greenville, all the white elementary public school children and also the parochial school from kindergarten through twelfth grade were 100 per cent. In Clarksdale, all white elementary and junior high pupils completed their dental corrections. Four schools in Greenville and one in Clarksdale held the 100 per cent record for both years of the biennium. Leland had the only consolidated school in the state to reach this goal. Besides the schools with completed corrections, there were eleven known to be above 95 per cent, two having the record both years. Classrooms which reported completed corrections numbered 327.

Dental corrections for needy children were made in 37 counties by 148 dentists who worked in their offices, in temporary clinics set up in schools, in the health department clinics of Harrison and Jackson counties, and in the Maternal and Child Health Clinic in the City of Jackson. Service for the indigent was supported by local and State Board of Health funds, a total of $12,000 from both sources being used. In Washington County where such a program has been in operation for a number of years, the cost of the work for 555 children during 1946-1947 averaged 81.5 cents per operation and $3.01 per child.

The dental activities were carried out in fifty-four counties by eight public health dental hygienists, a secretary, and a mouth health supervisor. Of these counties ten were without full-time health departments. Sixty-two dentists in private practice assisted with the school dental inspections which were made of 97,648 mouths. Dental prophylaxis was given to 4,770 preschool and school children by dental hygienists who also made 3,742 home visits. Completed corrections were reported through 31,170 certificates issued by dentists.

Dental workers were located as follows: Forrest County Health Department had a dentist during November-December 1945; Washington, Warren and Coahoma counties each had the services of a full-time dental hygienist; another dental hygienist divided her time between Harrison and Jackson counties. The other four hygienists worked in forty-five counties, assignments taking them to six, twelve, eighteen and twenty-one counties respectively. Twelve counties had help from more than one worker during the two years. The supervisor visited in twenty-eight counties.

Fifty-five dentists assisted in an examination to determine the Mississippi rates for teeth decayed, missing and filled. This detailed study of permanent teeth, known as the DMF index, was made during the 1946-47 school term, when the teeth of 34,927 children, ages 7-16 inclusive, were examined in thirty-four counties.

The DMF records vary from a low rate of 65.4 children per 100 who have a history of dental caries to 90.6 per 100. An important factor in this variation is the flourine content in the water. One part per million is considered desirable as a dental caries deterrent. This seems to be borne out by a comparison of age groups 7-16 inclusive in Clay County and Corinth. In Clay County, the fluorine in water supplies varies from 0.3 to 1.5 parts per million, and Corinth water has no fluorine. Clay County has the low caries rate of 65.4 per 100 and Corinth has the high caries rate of 97 per 100. Complete results of the DMF survey are shown on Tables 1 and 2. The State Board of Health engineering department coöperated in the study by making analysis of the municipal water supplies where the DMF examinations were made.

A three-year study on the effectiveness of topical application of sodium fluoride to the teeth was started in Greenville in February 1946 by a dental hygienist working under the direction of a United States Public Health Service dentist. A detailed examination was made by the dentist of 400 children in the 11-15 age group. The children, whose parents had given consent for their participation, were separated equally: male and female, age, and caries experience. Each child in the test group had a prophylaxis by the dental hygienist and two applications a week apart of a 2 per cent solution of sodium fluoride; each child in the control group had a prophylaxis only.

A second examination of the pupils was made in March 1947. The study will not be completed until a third examination is made in 1948, at which time conclusions will be reached.

A dental hygienist is conducting a study at Greenville with children, grades 1-3. The pumice used in dental prophylaxis is mixed with a 2 per cent solution of sodium fluoride, and records are kept on all children who receive the service. A nationally known clinician suggested this method of application to reduce caries activity, and in the March 1947 issue of the *Journal of the American Dental Association* it is stated "the use of topically applied fluorides by the dentist can now be recommended as a general preventive measure."

The State Board of Health established scholarships in dental hygiene in 1944. Two college graduates completed their training in June 1945 and 1947 respectively.

As a recognition of the Mississippi mouth health program, the supervisor of mouth health was invited to be a guest at workshops in Louisiana, Georgia and Michigan, two of which have been attended. Dental workshops are the means now popularly used by dental societies as a continuing process to meet adequately the present day needs of communities and states. In such workshops representative groups of dentists from each district of a state meet together to study, analyze, and find recommendations for the solution of existing dental problems. Personnel from health departments and allied fields are brought in as consultants.

Meetings with dental associations and with public health associations all have contributed toward bringing up-to-date information regarding mouth health organization, factual knowledge and methods of presentation.

The Mouth Health Division prepared new dental rosters in May 1946 and in May 1947. The latter contained 421 active dentists, 33 of whom are colored. There were 37 dentists on the inactive list.

Through the aid, stimulation and hard work of dental hygienists, dentists, civic clubs, health and school personnel dental corrections show a gain of 61 per cent over the previous biennium. With the continuing coöperation of all individuals, agencies and groups who made this progress possible, it is not unreasonable to hope that the next biennial period will see even greater gains.

TABLE I

MISSISSIPPI DMF-FLUORINE SURVEY

OCTOBER 1946 - MAY 1947

COUNTY	TOWN	P. P. M.* FLUORINE CONTENT	No. Exam.	% DMF	% Pupils With Missing Teeth	%Pupils With Fillings	Ages
Adams	Natchez	0.0	1579	79.4	17.6	42.9	7-16
Alcorn	Corinth	0.0	862	86.3	15.4	63.1	7-16
Amite	Crosby Well 1	0.5	0				
	Well 2	0.8					
Attala	Kosciusko	0.0	732	77.3	29.9	16.5	7-16
Bolivar	Cleveland	.	0				
Chickasaw	Houston	1.0	0				
	Okolona	0.0	278	74.1	13.3	45.7	7-16
Claiborne	Port Gibson	0.3	280	86.4	19.3	50.0	7-16
Clay	Totals	)	1005	65.4	11.1	39.7	7-16
	Montpelier	1.0)					
	Pheba	1.5)					
	Siloam	0.5)					
	West Point	0.3)					
	Hurst Well	0.8)					
Coahoma	Totals	)	831	82.3	10.7	36.7	7-16
	Count Schools	0.3)					
	Dublin	0.3)					
	Friars Point	0.7)					
	Jonestown	0.2)					
	Lula Rich	0.0)					
	Sunflower	0.5)					
	Clarksdale	0.4	0				
	Lula	0.4	0				
	Lyon	0.5	0				
Copiah	Crystal Springs	.	0				
	Hazlehurst	0.0	0				
Forrest	Hattiesburg	0.2	1800	85.6	23.0	61.3	7-16
Grenada	Grenada	0.0	782	73.3	10.5	35.0	7-16
Harrison	Totals		1477	60.2	12.7	30.9	(7,9, (11,14, (16
	Biloxi	0.4)					
	Fernwood	0.4)					
	Gulfport	0.4)					
	Handsboro	0.4)					
	Long Beach	0.0	0				
	Miss. City	0.2	0				
	Pass Christian	1.0	0				

* P.P.M. = parts per million

COUNTY	TOWN	P. P. M.* FLUORINE CONTENT	No. Exam.	% DMF	% Pupils With Missing Teeth	% Pupils With Fillings	Ages
Hinds	Totals	)	5703	82.2	10.2	64.0	7-16
	Byram	1.0)					
	Clinton	0.0)					
	Jackson	0.2)	4423	83.0	8.7	71.0	
	Raymond	1.0)					
	Terry	1.0)					
Holmes	Totals	)	541	69.9	10.7	30.7	7-13
	Coxburg	.)					
	Cruger	0.5)					
	Durant	0.0)					
	Goodman	0.0)					
	Lexington	0.0)					
	Pickens	0.5)					
	Tchula School	0.0)					
	West	.)					
	Tchula	0.7)					
Humphreys	Belzoni	.)	0				
Jackson	Moss Point	0.8	0				
	Ocean Springs	0.0	0				
	Pascagoula	0.0	1024	56.8	14.2	28.8	(7,9 (11,14,16
Jones	Laurel	0.0	1577	86.0	20.4	58.8	7-16
Kemper	Electric Mills	3.0	0				
	Scooba	1.9	0				
Lafayette	Oxford	0.0	601	88.0	14.0	81.2	7-16
Lamar	Purvis	0.0	158	74.7	48.1	24.7	7-16
Lauderdale	Meridian	0.2	3173	82.2	20.2	49.0	7-16
Lawrence	Monticello	1.5)	0				
Lee	Tupelo	0.0	911	81.0	16.5	58.1	7-16
Leflore	Totals	)	522	49.6	7.2	36.4	7-13
	Greenwood	0.0)					
	Minter City	.)					
	Sidon	.)					
	Itta Bena	0.5	0				
	Morgan City	1.0	0				
	Swifton	1.5	0				
Lincoln	Brookhaven	0.0	466	88.4	21.0	36.7	7-16
Lowndes	Columbus	0.0	1389	85.2	20.3	56.8	7-16
Madison	Canton	0.0	546	78.9	11.5	66.5	7-16
	Madison	.	0				
Marion	Columbia	0.0	897	90.6	33.1	47.0	7-16
Mont.	Winona	0.5	361	74.0	13.8	34.3	7-14

COUNTY	TOWN	P. P. M.* FLUORINE CONTENT	No. Exam.	% DMF	% Pupils With Missing Teeth	%Pupils With Fillings	Ages
Noxubee	Brooksville	0.75	0				
	Shuqualak	1.5	0				
Oktibbeha	Starkville	0.0	625	75.7	13.3	62.1	7-16
Pearl R.	Totals	)	1117	76.7	21.7	32.4	7-16
	Picayune	0.0)					
	Poplarville	0.0)					
Pike	Magnolia	0.5	0				
	McComb	0.2	709	86.7	24.4	60.9	7-16
Rankin	Brandon	0.0	355	78.9	14.4	44.8	7-16
	Pelahatchie	0.0	0				
Scott	Forest	0.0	264	76.0	24.4	31.6	7-16
Sharkey	Rolling Fork	0.5	0				
Sunflower	Totals	)	562	52.1	7.1	17.8	7-14
	Drew	0.7)					
	Indianola	0.7)					
	Inverness	0.3)					
	Ruleville	0.3)					
	Moorhead	1.0	0				
	Sunflower	1.0	0				
Union	New Albany	0.0	459	80.6	12.2	61.4	7-16
Walthall	Tylertown	.	335	86.0	29.9	45.7	7-16
Warren	Vicksburg	0.0	2376	81.0	13.5	63.6	7-16
Washington	Greenville		0				
	Well No. 1	0.2					
	Well No. 2	0.3					
Yazoo	Yazoo City	0.0	589	69.8	11.5	47.2	7-16
			34927	78.6	16.3	50.3	

TABLE II
MISSISSIPPI DMF* SURVEY BY AGE GROUPS
1946-1947

Age	Examined	%DMF	% Pupils With Missing Teeth	% Pupils With Fillings
7	4568	48.2	1.3	29.0
8	4157	69.6	4.5	40.7
9	4540	75.6	7.5	43.6
10	3785	82.0	13.0	49.9
11	4265	84.8	19.2	53.3
12	3245	90.7	24.9	57.4
13	2815	90.3	26.3	65.4
14	3239	89.0	27.6	60.4
15	2290	93.4	32.8	69.0
16	1796	93.7	33.6	69.5
Totals	34927	27454	5690	17578
Percentage		78.6	16.3	50.3

*—decayed, missing, filled.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

....	*Oct. 1947*	*Oct. 1946*	*Oct.-5 Yr. Av.*
Poliomyelitis	11	31	13.8
Bacillary Dysentery	4	403	424.6
Dengue	0	0	0.0
Diphtheria	74	62	102.2
Influenza	40	2538	2349.6
Measles	5	175	102.0
Meningococcus Meningitis	1	0	3.6
Other Forms Meningitis	4	4	3.8
Pellagra	1	195	157.8
Pneumonia	50	974	677.0
Pulmonary Tuberculosis	146	239	175.2
Scarlet Fever	26	58	61.8
Smallpox	0	1	2.2
Tularemia	4	3	3.6
Typhoid Fever	2	7	9.4
Typhus Fever	10	4	15.0
Undulant Fever	6	10	6.4
Whooping Cough	28	521	430.0

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HIGHLIGHTS OF THE 1947 CONFERENCE OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION.

Again Mississippi was 100 per cent in attendance at the conference of presidents, presidents-elect and national officers. Here these officers meet each year to exchange their ideas and to establish lasting friendships. We always come renewed inspiration and much information.

Mrs. Luther Kice of New York, national president-elect, presided over the conference most graciously.

Mrs. Eustace Allen of Atlanta, Ga., national president, pointed out that her two most outstanding objectives for this year are to double our membership and to create better public relations.

Dr. Edward L. Bortz, president of A.M.A., was a luncheon speaker. Maintaining that the Woman's Auxiliary is the best asset that the A.M.A. has, he urged us to inform ourselves about what the medical profession stands for along the lines of legislation, health education, pre-payment medical and hospital plans, then take our places in civic groups and inform the public on these questions.

Senator Ellenore Bridenstine of Montana urged that physicians' wives even seek public office in order to clean up certain legislation. She said the premarital examination law came up five times in Montana before it was passed. We were urged to continue to sponsor essay contests in high schools on socialized medicine. Many of the states give large prizes for these contests—as high as $500.00 for first prize.

Some state auxiliaries give nurses' scholarships.

Several states publish their auxiliary bulletin separate from the doctors' journal.

Dr. Rodney, president of the Canadian Medical Association, also a luncheon guest-speaker, told of the meeting in Paris, Sept. 18, 1947, where there were forty-eight nations represented by 125 people for the purpose of organizing a world medical association. He said that such an organization will go a long way toward establishing world peace. Read about the organization in the Journal of the A.M.A., Oct. 25, 1947, pages 514 and 515.

The complete minutes of the conference will be printed in the next issue of the *Bulletin.*

Mrs. S. B. McIlwain, president,
Woman's Auxiliary to the Miss.
State Medical Association.

CHRISTMAS LUNCHEON

The annual Christmas luncheon of the Women's Auxiliary to the Central Medical Society was held Dec. 9 at Annie Laurie's Place with the members of the Vicksburg Auxiliary as guests.

The tables were festively decorated with poinsettias candle holders with white tapers and overlaid with gay holiday cloths.

Mrs. T. E. Wilson welcomed the members and their guests and Mrs. W. R. Bethea gave the invocation. Miss Louise Mimms, who presented a Christmas story, was introduced by Mrs. Walter Simmons, Jr.

Mrs. Raymond Grenfell was general chairman for the luncheon and her assistants were: Mrs. Claude Callender, Mrs. W. B. Wiener, Mrs. Lynn Abernathy, Mrs. Nathan Kendall, Mrs. James Caden, Mrs. W. E. Lotterhos, Mrs. Walter Simmons, Jr., and Mrs. Harvey Johnston.

Members and guests included about seventy-five.

S. M. A. ATTENDED

Mississippi doctors' wives formed a representative group at the meeting of the Auxiliary to the Southern Medical Association in Baltimore, November 24-27. A leader in the organization for many years, Mrs. Harvey F. Garrison, Sr., served as chairman of the nominating committee, while Mrs. Stanley Hill will be a member of the executive board the coming year.

New officers are: Mrs. Olin S. Cofer, Atlanta, Ga., president; Mrs. Joseph M. Kelso, Oklahoma City, Okla., president-elect; Mrs. E. L. Henderson, Louisville, Ky., first vice-president; F. W. Kreuger, Jacksonville, Fla. second vice-president; Mrs. Latena Flanagan, Richmond, Va., recording secretary; Mrs. W. A. Selman, Atlanta, Ga., corresponding secretary; Mrs. V. C. Hamer, Marshall, Mo., treasurer; Mrs. Stanley Hill, Corinth, Miss., historian; Mrs. Charles P. Corn, Greenville, S. C., parliamentarian.

Highlights of the meeting were addresses by the national president, Mrs. Eustace A. Allen of Atlanta, Ga.; and a special message and challenge from Dr. Edward L. Bortz, Philadelphia, Pa., president of the A.M.A.

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Surgery

Dr. John A. Toomey, Cleveland, Ohio
Pediatrician

Dr. Frank H. Lahey, Boston, Mass.
Surgery

Dr. Ralph Bowen, Houston, Texas
Allergy

Dr. Arthur J. Bedell, Albany, N. Y.
Ophthalmology

Dr. Wm. D. Stroud, Philadelphia, Pa.
Cardiology

Dr. Samuel F. Haines, Rochester, Minn.
Internal Medicine

Dr. Guy A. Caldwell, New Orleans, La.
Orthopedics

Dr. Rob't. W. Keeton, Chicago, Ill.
Internal Medicine

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Urology

Dr. Alton Ochsner, New Orleans, La.
Surgery

Dr. Tate Miller, Dallas, Texas
Medicine

Capt. George N. Raines, Bethseda, Md.
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Dr. V. S. Counseller, Rochester, Minn.
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Programs will be mailed January 10th. If you don't get yours write for one.

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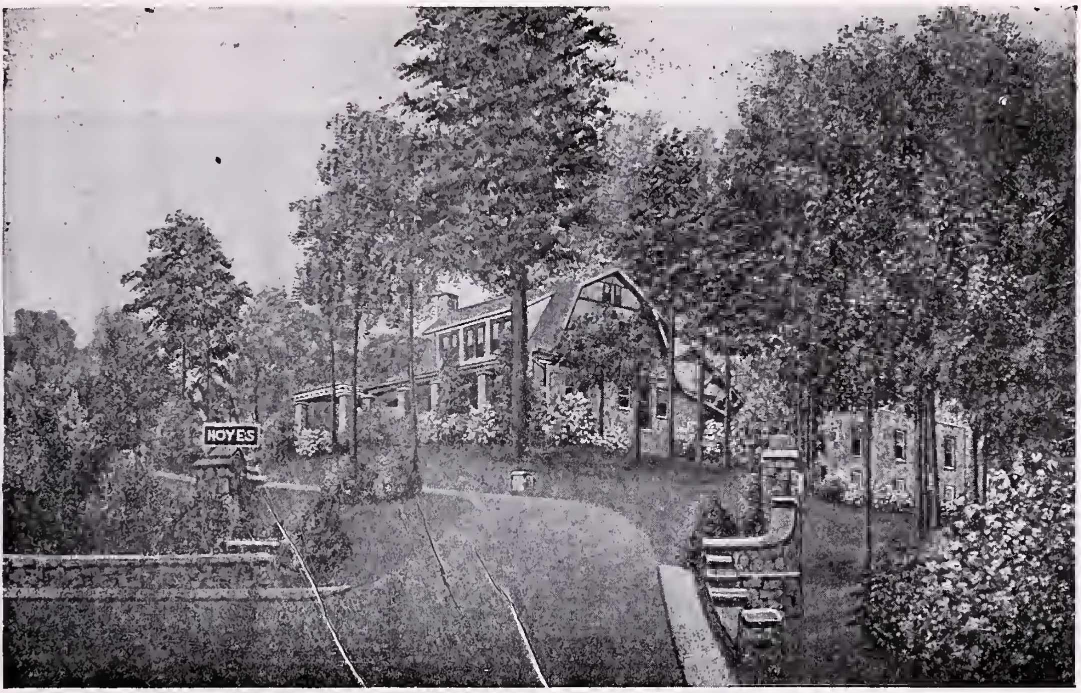

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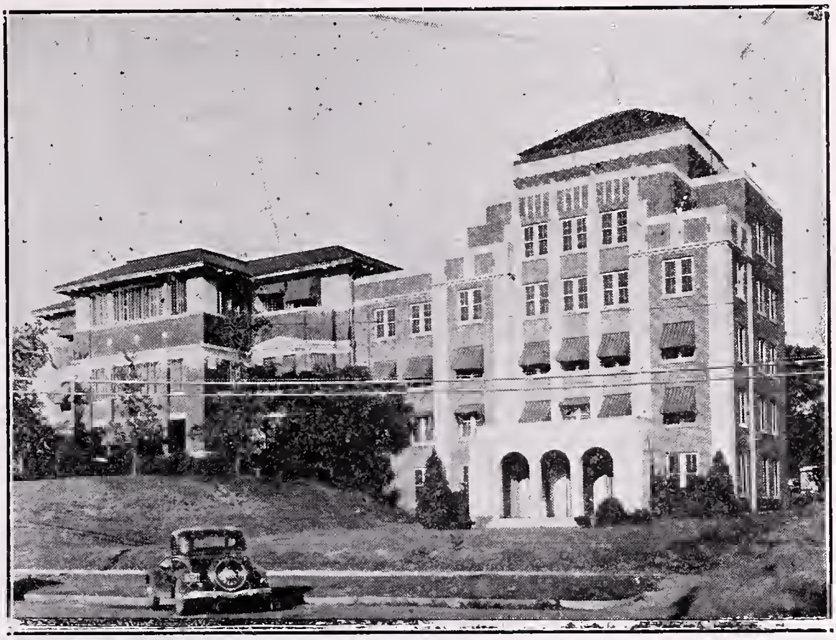

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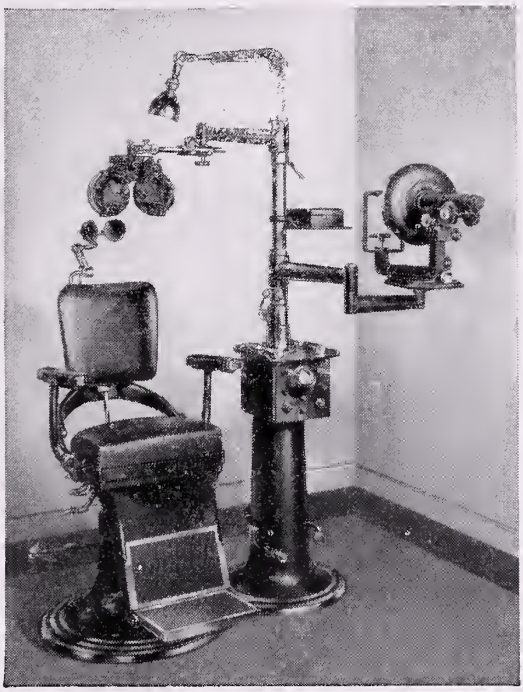

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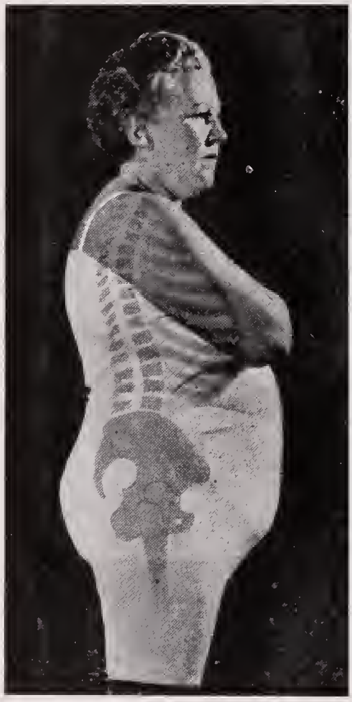
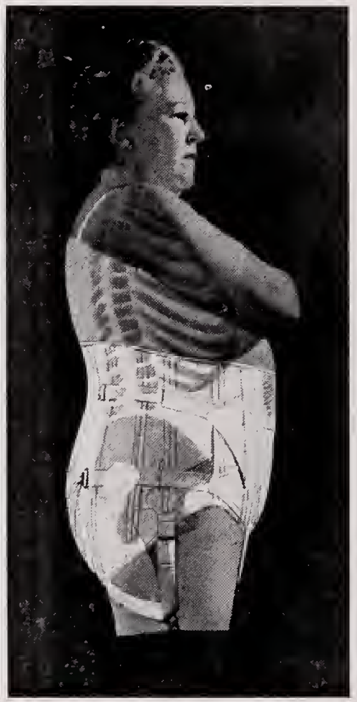


Patient with pendulous abdomen (skeleton indrawn).



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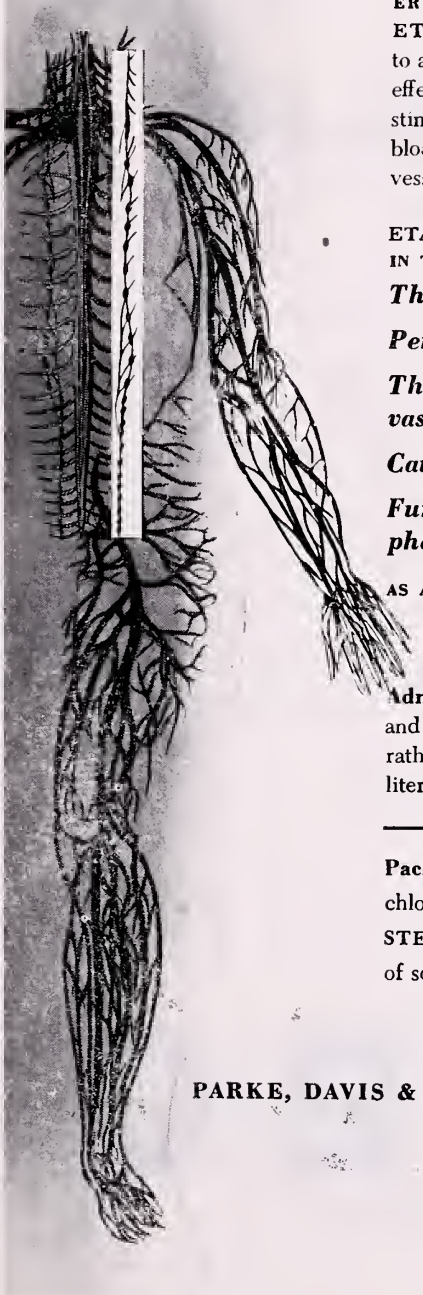

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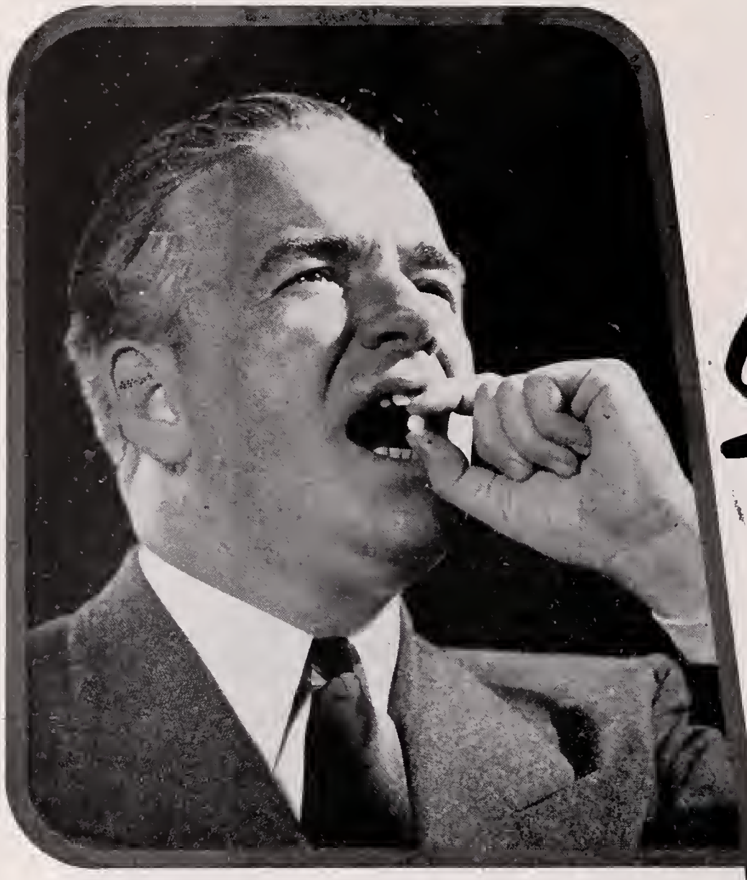

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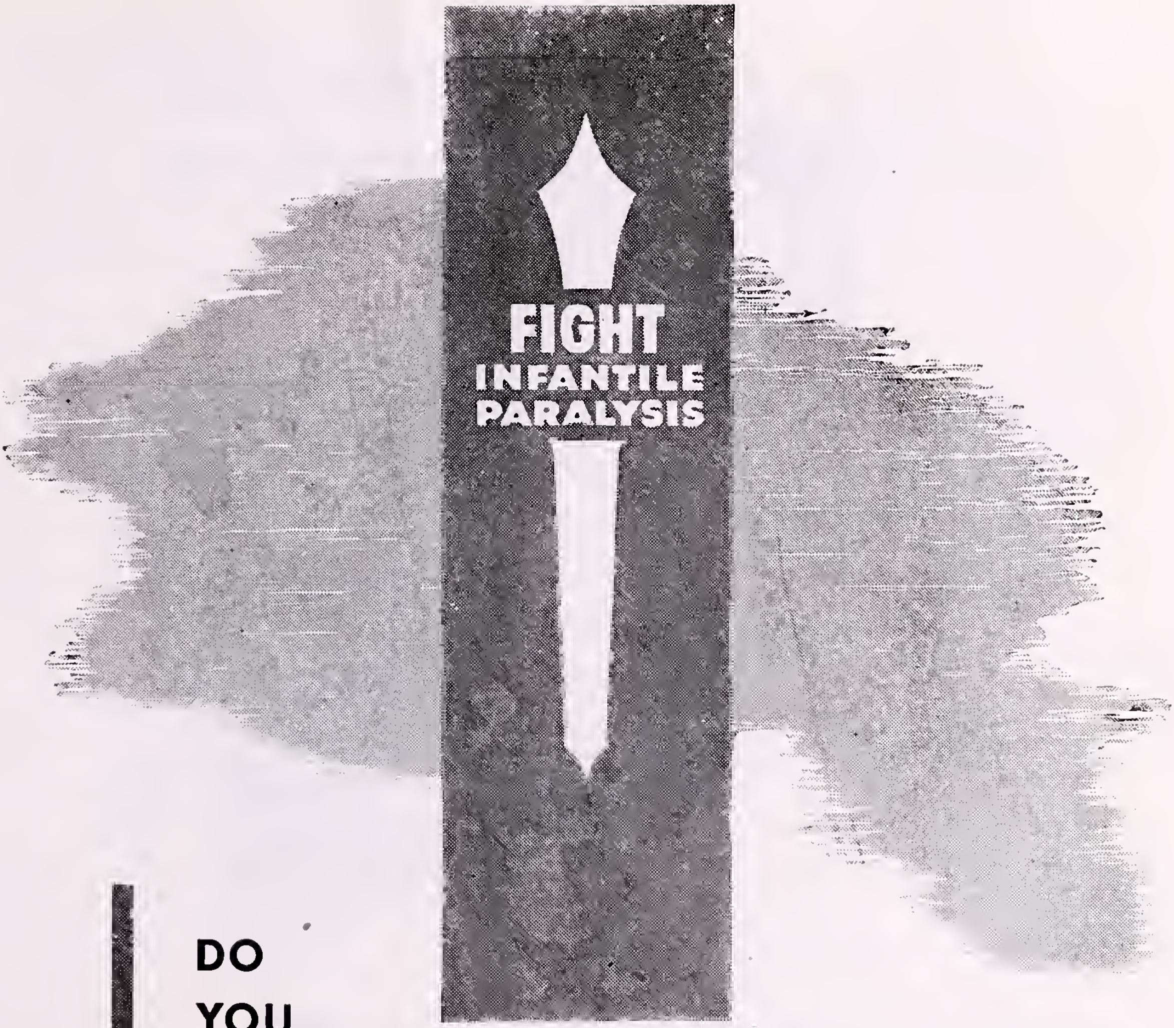

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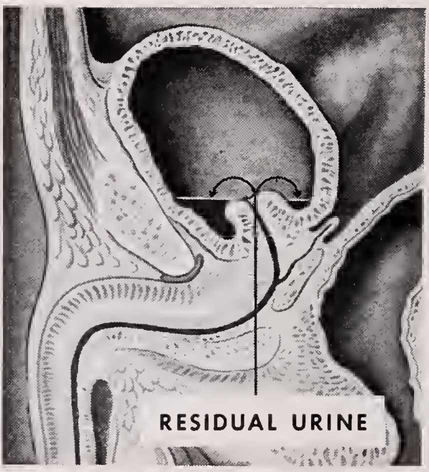

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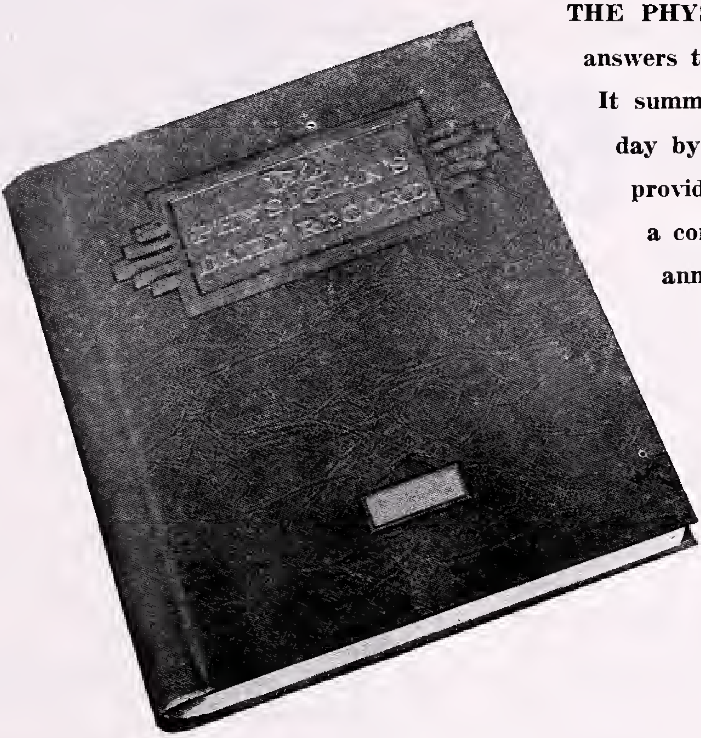

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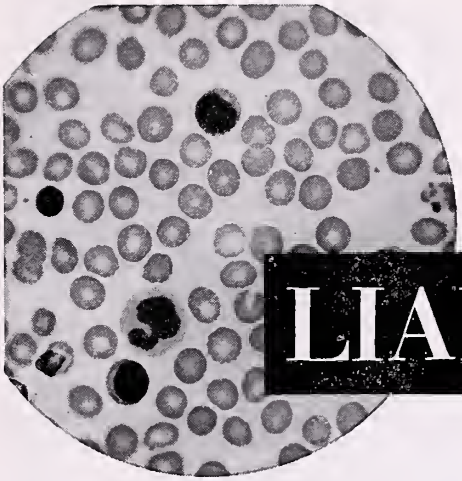

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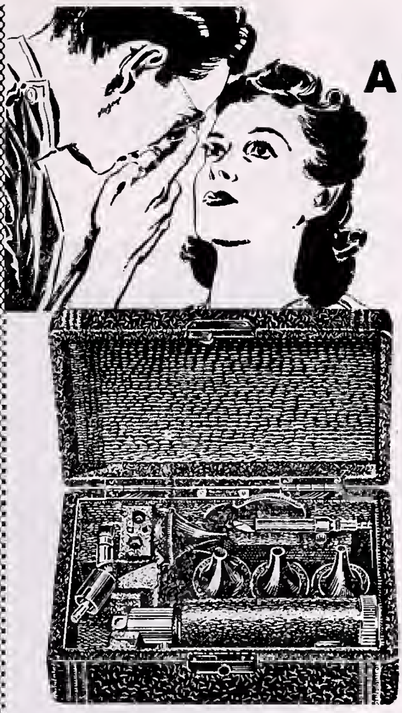

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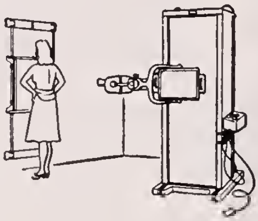

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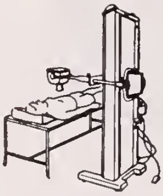

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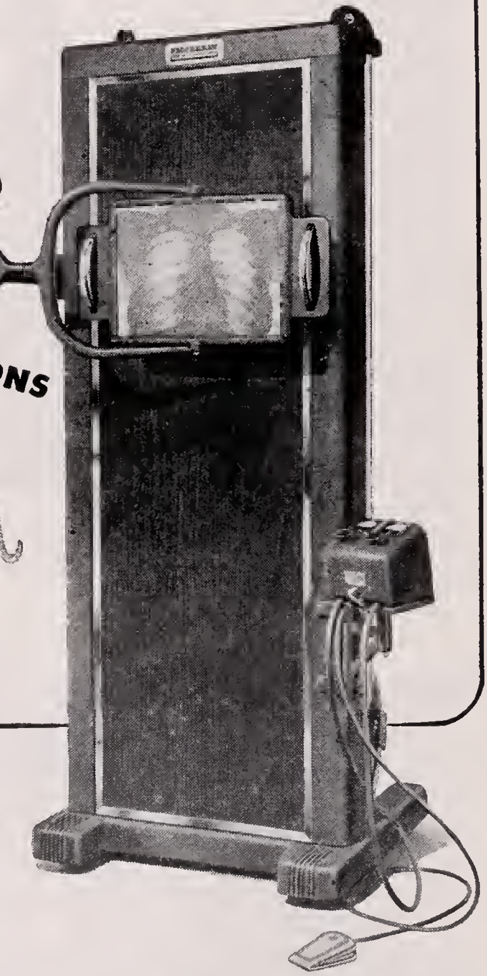

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The Significance of Postural Vertigo in Otoneurological Diagnosis*

J. R. LINDSAY, M.D.†
Chicago, Ill.

THE TERM "postural vertigo" refers to vertigo or dizziness which is experienced only when certain postures or positions of the head are assumed. It is accompanied by nystagmus, usually described as "positional."

The question as to the significance of this type of vertigo in localization and differential diagnosis has been the subject of special study for many years.

On the basis of the theories of Magnus and de Kleyn and of Quix and the otoliths were concerned with static equilibrium and the semi-circular canals with movement, vertigo which occurred only in certain positions was first considered to be a disease of the otolith system. The tendency was to restrict the term "postural vertigo" therefore to this type which appeared only when a new position had been reached.

Confirmation of the otolithic origin of postural vertigo has not been possible since it has never been demonstrated that the otoliths can produce nystagmus.

Vertigo and nystagmus which are present in all positions of the head have been considered as arising from the semicircular canal system, peripheral or central.

McNally and Tait have shown experimentally however that the utricles are stimulated by tilting movements of the head. This leaves some doubt as to whether a postural type of vertigo indicates an origin in the otolith system and suggests also that the type of vertigo which is brought on by movement of the head in any direction and disappears when the head is kept motionless cannot be attributed to the canal system alone. It appears rather that disease of the otolith system cannot be differentiated from disease of the canal system on the basis of the type of vertigo and nystagmus. Such a differentiation however does not seem to have clinical importance, since both systems are intimately related in the ear and probably also in the central nervous system.

The question as to whether the postural character of the vertigo and nystagmus can contribute to the localization and differential diagnosis is of more practical significance.

TYPE OF POSTURAL VERTIGO AND POSITIONAL NYSTAGMUS

The best objective indicator in postural vertigo is provided by the accompanying positional nystagmus.

On the basis of clinical observations classifications have been presented by Ruttin, Nylen, Seifert and others.

Some differences of opinion have existed as to what type of case should be included in the classification.

When "postural vertigo" is interpreted as that which appears only in certain positions of the head, a division into two main groups seems to have met with general approval:

Type I, in which the nystagmus is reversed or altered in direction dependent upon the position of the head, and

Type II in which the direction is constant although the nystagmus occurs only in certain positions.

Considerable variation from this clear-cut distinction is met with in practice. For instance there are cases where the symptom is not regularly elicited by the same posture. In some the nystagmus may appear, reach a maximum in a few seconds then disappear within a few seconds, or it may then reverse in direction. In some the nystagmus will appear in certain positions only when the position follows a certain other position, or only when the rate of change has been fairly rapid. The nystagmus may be of short duration or be maintained. All of these variations may be included under Type I.

Considerable variation in Type 2 also occurs. There may be no nystagmus in the upright or certain other positions, or there may be a mild nystagmus in all positions, yet the intensity be so increased in certain positions as to justify the term "postural" or "positional." Occasionally minor changes in direction occur such as from a diagonal direction to a vertical, or a rotatory to a diagonal, etc., which make classification indefinite. Such minor changes probably may be included in Type II. They are in sharp contrast to the average Type I in which a straight reversal occurs.

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*Read before the fifty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Feb. 13, 1947, Memphis, Tennessee.

†From the Division of Otolaryngology of the University of Chicago.

In addition to these types of "postural" change a group exists in which any head movement brings on vertigo and nystagmus which may last for perhaps half a minute or more, possibly also with nausea after the head is kept quiet. It has been considered that this type originates from the canal system, but in view of the evidence that the utricles respond to movements as well as the canals no reliable interpretation as to origin from otolith or canal system seems possible in any of the above groups.

It seems reasonable, in a case of nystagmus which appears on movement to include it in Type I or II, above, depending upon whether the direction changes or is constant.

Another group exists which is difficult to classify, in which any movement of the head, or possibly only certain positions (i.e. head hanging) may produce a sense of extreme dizziness with nausea and vomiting without clear-cut nystagmus.

EXAMINATION

The history should include specific questions to bring out a possible "postural" character of the vertigo. The symptom is so distressing that patients usually become quickly aware of the positions which give relief.

In all cases in which the complaint is still present it is possible to confirm it by posturing the patient and observing the nystagmus which occurs.

A routine method of doing the tests is necessary. The tests should be made a part of the routine vestibular examination in suspected intracranial lesions, since the symptom may be elicited in certain postures without the patient's awareness, for example, when the head is allowed to hang over the end of the table.

While postural tests should theoretically be carried out by passive movement with the head and body maintained in the same relation to each other there is little practical objection to having the patient turn from one position to another. The routine which I have used is as follows:

1. Auditory function.
2. Examination for nystagmus with patient sitting erect on the examining table or resting in the lying position. Goggles are placed on the patient with heavy biconvex lenses (+20 diopters) to eliminate fixation and allow the nystagmus free range.
3. Compression over the carotid sinuses.
4. Fistula test.
5. Postural tests.

1). supine position—the change in position is made fairly rapidly in each case, since the symptoms will sometimes appear only after a quick change. (About ten seconds are allowed for the symptom to appear. If nystagmus appears it may require up to two or three minutes to see if it disappears.)

2). from supine position to right side.
3). from right side to supine.
4). from supine to left side.
5.) from left side to supine.
6). from supine to the head hanging position, (backward).
7). supine position from head hanging.
8). erect position from supine.
9). stooping forward.
10). erect, from stooping position.
11). head shaking.
12). caloric tests, and tuning tests when necessary.

The postural tests do not require over a few minutes to carry out. They may furnish the only objective confirmation of the patient's complaint and on the basis of accumulated observation they appear to give helpful diagnostic information.

INTERPRETATION OF TESTS

Nylen, on the basis of observation on brain tumors, found that Type I positional nystagmus was characteristic for cerebellar and pontine tumors, while Type II occurred predominantly in cerebello-pontine angle tumors. Seifert found Type I positional nystagmus in centrally located lesions, Type II in a few cases of inner ear disease and in "retrolabyrinthine" lesions such as trauma and concussion. Ruttin expressed the opinion that a positional nystagmus without regularity of direction indicated a central disturbance.

The observations which I have been able to make over a period of fifteen years may be described under three headings:

1. Postural vertigo and positional nystagmus in diseases of the inner ear.

Localization to the inner ear or peripheral apparatus was based upon the combination of vertigo with deafness or tinnitus or both.

a) Ménière's disease of the idiopathic type, or labyrinthine dropsy has been accompanied in the subacute or receding stage of an attack by a postural type of vertigo in several cases. The history suggests that a postural effect occurs more frequently than has been observed. Type II positional nystagmus has been characteristic, although slight alteration in direction has occurred.

b) Non-suppurative otitis media in the subacute stage has been observed to cause a violent vertigo, nausea and nystagmus of constant direction lasting less than one minute upon movement of the head into any new position. It seems justifiable to consider this as Type II positional nystagmus although it is admittedly not possible to distinguish between the effect of motion and the effect of a new position, since the two are inseparable.

c) The apoplectic type of vertigo deafness and tinnitus which occasionally occurs in a previously normal ear in people of middle age or older is sometimes followed by postural vertigo for long periods. The etiology is probably a vascular accident in the labyrinth. Two cases of this type have recently been observed, one with symptoms for one and one-half years and one for six months. Inner ear deafness of moderate degree in one and profound in the other had resulted. The positional nystagmus changed to a vertical downwards. These were the only cases in which a Type 1 positional nystagmus was observed in a known peripheral ear disease.

2. Postural vertigo and positional nystagmus in disease of the central nervous system.

Nylen reported positional nystagmus in 90 per cent of posterior fossa tumors. While statistical studies have not been made in our series this type of vestibular reaction appears to have been the most common. A positional nystagmus has sometimes been demonstrated on tests in the absence of vertigo or spontaneous nystagmus either in the upright or in the position which the patient assumes in bed. Type I has been most frequent in posterior fossa tumors.

In multiple sclerosis a postural type of vertigo and positional nystagmus Type I has been observed.

In cases of head trauma and concussion, without hearing impairment a positional nystagmus Type II has been observed on positional tests.

In cases of posttraumatic syndrome vertigo may be a predominant complaint. The postural tests are frequently necessary in order to reproduce the symptom and demonstrate the nystagmus.

Experience has demonstrated that a postural vertigo is more frequently found in intracranial disease than is vertigo which occurs independently of position of the head.

3. Postural vertigo and positional nystagmus in pseudo-Ménière's syndrome.

The absence of either auditory symptoms or localizing central nervous system signs leaves the localization of the lesion in doubt in this syndrome. Vertigo of the vestibular type of unknown origin is implied by this symptomatic diagnosis.

In clinical experience this group comprises something like one-half the cases complaining of vertigo.

The vertigo may be violent at onset and constantly present for the first day or so but usually becomes postural as it recedes. Or, it may occur only in certain postures from the time of onset. Postural vertigo is so frequent in this syndrome that it may be considered as a characteristic. This degree of frequency is strongly suggestive of a central origin, inasmuch as postural vertigo is relatively uncommon in inner ear disease as compared to known intracranial lesions.

Several possible etiologic factors for pseudo-Ménière's syndrome may be recognized.

Cerebral arterio-sclerosis and hypertension frequently give rise to the syndrome. In those cases which have been examined a positional nystagmus Type I has been usually demonstrable. In most cases however the vertigo is most severe in some particular position and all positions may have to be tried before a reversal of the nystagmus can be produced.

A toxic factor is apparently a frequent cause for pseudo-Ménière's syndrome, either drugs such as alcohol or streptomycin, or infections. A Type I positional nystagmus has been demonstrated in most of this group.

The largest group of pseudo-Ménière's syndrome appears to fit into the class of circulatory disturbances of the vasomotor type. It includes the vertigo which is related to hypotension and is also common at the menopause along with other vasomotor phenomena.

In this group Type I positional nystagmus has been usually demonstrable.

DISCUSSION

Postural vertigo and positional nystagmus are frequent in known central vestibular disease and infrequent in disease of the peripheral labyrinth.

The occurrence of postural vertigo as a characteristic of pseudo-Mènière's syndrome is therefore strongly suggestive of a disturbance of the central vestibular nuclei rather than the inner ear.

TREATMENT

The treatment in pseudo-Ménière's syndrome is dependent upon the diagnosis of the underlying disease. The symptomatic treatment for vertigo consists of avoiding movement of the head and those positions which bring on vertigo, the use of mild sedation. Further treatment depends upon the etiologic factor involved, most common of which is a vasomotor disturbance related to low blood pressure or to the hormonal disturbance at the menopause. Next in order of frequency is probably a toxic effect from infections of the gastrointestinal and respiratory tracts, bacterial or virus in origin. In later life arterio-vascular disease and hypertension undoubtedly produce local vascular changes as well as the more extensive lesions such as thrombosis of the posterior inferior cerebellar artery.

Vagotomy in Peptic Ulcer*

ROBERT E. SHANDS, M.D.
Jackson, Miss.

It has been stated in the statistics compiled by Allen[1] that 20 of every 100 gastroduodenal ulcers do not respond to the conservative therapy of diet and drugs. A part of this group develops the perforation, repeated hemorrhages, intractable pain, obstruction, or the question of malignancy arises. Consequently these patients are submitted to surgery and the remainder are considered medical failures.

The operation of resection of the vagus nerve supply to the stomach has occupied interest of the profession over the past few years as possibly being a solution to the group of peptic ulcers classified as medical failures. The indications for vagotomy may be simply stated as being; intractable unmanageable pain, repeated hemorrhages, and marginal ulcers. Although this operation is being used in conjunction with gastric resection, pyloroplasty and gastro-enterostopleural effusion and chest pains are listed in perforations and hemorrhages.

With the above stated indications used as a working basis a series of ten vagotomies have been performed by the abdominal route. The purpose of this communication is to report the results observed in these cases. This observation has been continued over the past ten months and with the exception of one, all patients have been seen on an average of three weeks since the vagotomy was performed.

In 1910 Pavlov[2] and his workers demonstrated that the vagi nerves constituted the main if not the only pathway for the efferent fibers of the conditioned reflex associated with digestion. With these facts in mind the severing of one of the vagi combined with gastric surgery was done with results reported as varying from encouraging to disappointing[3]. With animal experimentation it became increasingly clear that the principle whereby that hypermotility and hypersecretion were constant factors in chronic peptic ulcer and that these two conditions were influenced largely through the vagus nerves and that the incomplete division of the vagus nerves was the probable cause of failure in the previous attempts[4]. A transthoracic approach was then devised on the basis that the nerves following along the esophagus could be more completely removed for a greater distance and the ends of the nerves could be brought out under the pleura. These facts obviously remain true but the disadvantages of postoperative pulmonary edema, pneumonia, pleural effusion and chest pains is listed in the literature[5].

The reason all of these presented cases were operated on by the abdominal route as elsewhere and also that much was to be gained by visualization and palpation of the tissue involved. I believe the weakness of the abdominal approach lies in the fact that it is technically more difficult to sever all of the fine filaments of nerves and also that the probability of regeneration is greater as the proximate nerve ends are not as adequately disposed of. Moore of Boston combines both methods by cutting the diaphragm and resecting the nerve widely in both directions[6]. Smithwick has repeatedly shown the tendency of the automatic nervous system to regenerate through tissue planes and ligatures[7] and in resecting a part of the sympathetic chain has found it necessary to place a silk bag over the cut end and bury the whole in muscle tissue to prevent regeneration. The use of silver clips on the proximal ends of the nerves severed by the abdominal route is now in use in an attempt to prevent regeneration but the whole problem of regeneration of the vagus nerve remains in the future, although it is interesting that Ivy has shown that the gastric motor fibers in dogs do not regenerate within two years[4].

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*Read before the Section on Surgery at the annual session of the Mississippi State Medical Association, Jackson, Miss., May, 1947.

All of the cases reported here were proved duodenal ulcers extending over a period of years with frequent laboratory and x-ray examinations. Two had perforated in the past and there are no gastric nor marginal ulcers covered in this report. The ages ranged from twenty-eight to fifty-three years and the most important indications for submitting these people to vagotomy operations was intractable pain, which had failed completely and miserably over a long period of time to conservative management by diet and drugs. Most of these cases were in the lower economic brackets, depending on manual labor for a living and they found it nearly impossible to take the prescribed amount of rest and diet and surround themselves with the proper amount of quietness and relaxation so essential in the medical management of ulcer. I took this into consideration in evaluating them for this operation together with the fact that I had been treating most of these cases over a period of four to ten years. One case had bled once three years ago.

In following the literature on this subject I have been struck by the fact that those cases of gastro-duodenal ulcer that show excessive gastric secretion, collected by Wangensteen suction from 9 P.M. to 9 A.M. (usually upward to 700 cc.) together with hypermotility are the group that respond better to vagotomy and are also the most likely ones to develop marginal ulcer following gastric surgery[8]. Authors in previous reports have demonstrated that sectioning of the vagi reduces the night secretion from 40 per cent to 60 per cent and reduces the free Hcl to zero, at the same time reducing the total acidity an appreciable amount[4]. In view of the above I do not do a vagotomy on any patient who does not have a marked increase in the night secretions.

It is generally conceded that gastroduodenal ulcer is a psychosomatic disease and is produced by the corrosive action of gastric juice, which has been proved capable of digesting living tissue including the mucosa of the duodenum and stomach. In the normal individual food acts as a buffer agent to the secretions and the cerebral phase of digestion is not carried over into the resting phase of the stomach by overactive vagi stimulation, which has been proved to be the case in peptic ulceration. Upon this concept was predicated the operation of vagotomy, thus to eliminate the cerebral influence upon the secretory phase of the chronic ulcer stomach. The above precept is broad in application as stated and it is well to emphasize here that vagotomy is an operation to be used only rarely and that any ulcer patient getting along fairly comfortably on a dietary régime is best treated by that manner and the trustworthy types of gastric surgery that have served us so well in the past should still retain their places in helping to deal with the problem of chronic peptic ulcer.

In the county served by the writer there are an estimated 115 cases of peptic ulcer and in the screening of these for vagotomy there are no more than twelve considered at the present as being candidates for this operation. Many of the current cases being treated medically are returned service men, while by far the greatest percentage of chronic ulcers in north Mississippi occur in the malnourished, impoverished, white male ranging from young to early middle age. I see very little peptic ulcer among the negro race although one of the two old perforations was in a negro male, who had suffered perforation and been repaired about four months previously. The other perforation was a white male who had acute perforation six months previously. In both cases the burning pain, heartburn, and hunger pangs returned about six to eight weeks following operative closure of the perforation. These constitute the only cases in this group who had previous surgery of any kind.

The preoperative care, technique, and the postoperative care has been varied only in minor details from case to case, which will be pointed out along.

Preliminary study of x-ray, laboratory and measuring of the night secretions are carried out. The latter is performed at 9 P.M. and allowing the nasal catheter to remain in place and the secretions to collect until 9 A.M.[8]. The indications for vagotomy are again reviewed in respect to this particular and any needed supportive measures are given if this patient is considered a subject for this operation. Avertin and ether have proved a very satisfactory anesthesia to the author, although I think any anesthetic which is familiar to the anesthetist and surgeon and which they customarily use for gastric surgery is the one of choice. When the abdomen is opened 1/125 grain of atrophine sulphate is given intramuscularly. This is an effort to combat vagovagal reflexes, which have been discussed lately in connection with three deaths from vagotomy[9,6]. Adequate exposure is made by cutting the triangular ligament of the liver[10] and swinging the right lobe of the liver to the right. Traction upon the stomach downward will bring the esophageal hiatus into view. Ten cc. of 1 per cent novacain is injected subperitoneally over and about the esophagus raising an edematous wheal about the esophagus and hiatus. This procedure is also designated to combat vagovagal reflexes. The author injected an aqueous solution of methylene blue in this anatomical location of a fresh cadaver and tissue was stained about the esophagus and under the crura of the hiatus for about two inches. This should diminish the likelihood of stimulation of the vagus by manipulation. I have also found this edematous infiltration elevates the peritoneum and facilitates the finger dissection about the esophagus. As soon as this dissection is carried out a tape is passed about the esophagus and by gentle traction the esophagus can be pulled into the abdomen for several inches. The vagus stands out taut on either side. Remembering the vagovagal reflexes too much tension is guarded against, but enough made to identify the nerve structure. The nerves are separated and identified and as much nerve tissue as possible is divided between clamps, the proximal ends ligated with cotton and allowed to retract into the mediastinum. It has been my experience to find the right nerve usually as a single, easily identified unit, but the left has usually been harder to find and in many small filaments. In this step is where I believe most of the failures to secure relief will occur, that is, in overlooking some of the fine filaments that separate widely in the subperitoneal tissues or lie close to the esophagus. No sutures are taken in the elevated peritoneal flap about the esophageal hiatus. I use a solution of thrombin and inject under the flap, which in the presence of blood elements and slight pressure effects a sealed closure and controls any small oozing which if present is usually from the posterior surface of the esophagus.

In the first few cases I instituted a Wangensteen apparatus following reaction from the anesthetic and allowed it to remain in place for four days, but I have omitted the use of it in the remainder of the cases and received the gratitude of the patient. Instead I use prostigmine intramuscularly every six hours for four days[11]. There has been no vomiting or distention, and gas is passed usually on the third day. I have the patient out of bed the next day if possible and he is given liquids in two days and soft diet in four days. The usual hospitalization period is one week. I use no dietary restrictions once they are on regular diet and no medications are given following discharge from the hospital. These patients have a remarkably comfortable postoperative course, a fact, I have also noted in postoperative presacral neurectomy performed for intractable dysmenorrhea.

The primary object for which the patient usually submits to the operation, namely relief of pain, is quickly achieved. None have had the burning epigastric distress following reaction from the anesthetic. This absence of pain is the most gratifying and spectacular part of vagotomy. Sensations of fullness and distention are retained, as it has been shown that the sensory pathways are over the sympathetic and not the vagi[12]. These sensations are abolished by spinal anesthesia to the level of the sixth dorsal vertebrae[5].

The complications of vagotomy as I have encountered them are gastric retention and diarrhea. One case developed a diarrhea on the twelfth postoperative day after he had been on a normal diet for a few days. This consisted of an average of four stools a day for three days. He has had two such attacks since, which were about ten days apart. He did not report in for treatment and the condition cleared rapidly. One case has stated that he has the sensation of feeling slightly distended after eating a full meal for a longer period of time than before the operation. These patients actually have no serious complaints. In searching the literature many speak of gastric retention to the extent of a gastroenterostomy being necessary although some writers disagree on this[11]. The use of drug urecholine or B-methylcholine chloride as discussed by Smith[5] sounds promising in this complication. I was rather apprehensive of the need of gastroenterostomy in the two cases previously perforated, but the pylorus was patent and no complications followed surgery.

Postoperative studies of these cases reveals that all have gastric retention and lessened peristalsis. The waves of peristalsis are present but are lacking in intensity and propulsive qualities. The stomach is larger and apparently has very little tone. Part of the barium remains at the end of six hours. No abnormalities are noted in the remainder of the G. I. tract. The response to gastric acidity has been fairly uniform, that is, a reduction of free HCl from 2 to 0 and the total acidity averages between 12 to 20°.

Two tests are used to test the completeness of sectioning of the vagus nerve. Hollander's test was used in these cases, which consist of taking a gastric analysis, then giving twenty units of insulin and testing the gastric acidity every ten minutes for one hour. The acidity promptly increases if all the fibers of the vagi are not severed. Histamine and caffeine, which act locally, show no change in their ability to produce an increase in acidity. The other test consists of instilling 300 cc. of 0.5 per cent HCl into the stomach by nasal catheter[14] and allowing it to remain. This produces a typical ulcer syndrome before the vagotomy but not afterwards. There was no response to any of these cases to the Hollander test. It should be noted that in case of irregularities with the insulin test a blood sugar of 50 mg. must be produced before the hypoglycemic cerebral stimulation takes place and when a doubtful test is obtained, as when the acid test is negative and the insulin test is positive, then blood sugar determination should be made to eliminate this source of error.

Nothing has been said so far concerning healing of the ulcer following vagotomy. While this is not as spectacular as the elimination of pain, it is important from a prognosis viewpoint, otherwise the possibility of perforation and hemorrhage would remain. The ulcer niche observed by the barium meal and x-ray appears to heal and the spasticity of the duodenum to disappear. The maximum of elimination of symptoms and regression of pathology have been met in all of these cases at this time.

Over this same period of a year that these cases were operated upon and studied, I performed four subtotal gastric resections using Bilrath no. 2 technique in one case and the Hofmeister technique in the others. There were also two gastroenterostomies performed during this period. No deaths occurred in any of these cases of gastric surgery or of vagotomy either. A comparison of results in these side by side cases would be in order. As would be expected, the morbidity in gastric surgery is much greater than in vagotomy, the period of hospitalization was longer, weight loss and strength reduction greater, and the period of adjusting to food again extended over a greater period of time. The likelihood of leakage and peritoneal contamination is of course present in gastric surgery and not in vagotomy and I can truly say that the problem of postoperative gastric retention was greater in gastric surgery than in vagotomy, but for only the first ten days. I think otherwise, that the results of gastric surgery are comparable to that of vagotomy and one group is as free of complaints as the other. One gastric resection has mild distention at times and one gastroenterostomy was a failure because I stepped beyond the only indication I have used in gastroenterostomy, namely obstruction. I ignored the indication and did one for chronic ulcer with a prompt recurrence of symptoms.

None of the cases of gastric surgery had vagotomy combined as is being performed in some clinics. These cases were a much older group of individuals than those who were operated upon for vagotomy. No marginal ulcers have developed to date and none have been reoperated on for any cause. The postoperative gastric acidity in the gastric surgery cases is higher than the vagotomy cases and in view of this, I feel more apprehensive about the development of jejunal ulcers than I do in the vagotomized patients.

SUMMARY

A small series of patients with gastroduodenal ulcerations were submitted to resection of the vagus innervation of the stomach with the indications of intractable unmanageable pain, hemorrhage, recurrent and stomal ulcer being the basis for the selection of cases.

These patients have been under medical management for a period of years and have proved resistant to various forms of drugs and diet. The response following sectioning of the vagus nerves has been very encouraging. Burning, gnawing pains, and hunger pangs have disappeared and observed by barium meal and x-ray the ulcers appear to heal.

Free hydrochloric acid has dropped to around zero and the total acidity has decreased to between 12 and 20° postoperatively. A temporary diarrhea occurred in one patient, which was not severe enough for treatment. One patient, upon being questioned, stated that he felt slight distention at times.

The abdominal route of vagotomy is discussed and was the only one used in these cases. The importance of making a meticulous search for all filaments of the nerve is emphasized.

Gastric retention and lessened motility are constant findings in this series and are present to date. All patients are on a regular diet, have gained weight and are performing their regular line of work.

A small series of gastric resections and gastroenterostomies, also performed over this same period of time, compared. The results in gastric surgery is comparable to that obtained in vagotomy but the dangers and morbidity are greater. The recurrence of ulcers in gastric surgery is estimated between two and eight per cent[15,16].

CONCLUSIONS

1. The results of vagotomy performed on ten patients have been complete relief of symptoms and healing of the ulcer as demonstrated by barium meal and x-ray.

2. Gastric retention and diarrhea have been the complications encountered in these cases following vagotomy. One patient developed a transient diarrhea and all had some degree of gastric retention as demonstrated by x-ray. None of these patients complain today.

3. A reduction of night secretions and free HCl and total acidity were constant findings postoperatively.

4. No attempt is made to evaluate this operation. More time and study are necessary to determine the place this operation will eventually play in the treatment of peptic ulcer.

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DISCUSSION

Dr. W. H. Parsons (Vicksburg)—The essayist has presented in a conservative manner the present picture of vagotomy of the stomach and duodenum. I think that it is notoriously true that relatively recent procedures are often highly publicized, and occasionally that individual or group which originates a procedure becomes overly enthusiastic about it.

Unquestionably, as Doctor Shands states, complete division of the vagi nerves will relieve the pain suffered by patients having gastric or duodenal ulcer. Further it undoubtedly will decrease the acidity and the hypermotility of the stomach. After all, the various surgical procedures designed for the cure of peptic ulcer aim chiefly to do so by decreasing or abolishing the acid content of the stomach and by providing adequate emptying of the stomach. It is perhaps true that in major measure the cure of any ulcer depends upon the relative or absolute attainment of achlorhydria. Perhaps vagotomy will accomplish such equally as well as other surgical measures.

I concur entirely in Doctor Shands' statement that if we are to evaluate the end results of gastric neurectomy we must do division of the vagus nerves, and do this only on the patients being studied. It is certainly true that elderly patients having duodenal ulcer with pyloric obstruction and low acids are almost invariably cured by simple gastroenterostomy. It is also true, although I do not prefer such a procedure, that many patients, at least from a clinical point of view and roentgenologically, are cured of gastric ulcer by simple gastroenterostomy. If these statements are true, it is obviously untenable to conclude that vagotomy done in conjunction with gastroenterostomy or gastrectomy or any other surgical procedure on the stomach is responsible for the cure, if cure is accomplished. To reach an intelligent conclusion as to what vagotomy we must study over sufficiently long periods of time a sufficiently large number of patients known positively to have peptic ulcer and who are subjected solely to vagotomy. That is an important point which Doctor Shands has stressed, and which so many clinics have failed to observe.

I further agree with Doctor Shands that the operative approach should be by the abdominal route for the reason that in my opinion the lesion ought to be visualized and it is impossible to do so, or at least inconvenient to do so, by the transthoracic route. The operation is not unusually difficult by the abdominal approach provided the liver is mobilized, and certainly the increased technical difficulty is more than compensated by the advantages gained.

My own feeling is that gastric ulcer ought not to be treated by gastric neurectomy. Personally I infinitely prefer gastric resection for this lesion for reasons unnecessary to repeat. Further, I rather feel that if surgery is necessary for duodenal ulcer, and usually it is not, that if possible the ulcer ought to be excised, and under those circumstances I do in addition a partial gastrectomy. I feel particularly that duodenal ulcers operated on for massive bleeding should be resected.

It seems to me that at present the chief indications for gastric neurectomy are in dealing with gastroenteric ulcers which have followed some other procedure, or as an addition following excision of a duodenal ulcer, or in conjunction with subtotal gastrectomy if considerable stomach remains. The occasional patient, whom we all see, who appears utterly refractory to medical and surgical treatment may be greatly helped by gastric neurectomy. If that proves true we shall certainly be indebted to those who have originated this procedure.

Dr. Lee R. Reid (Sanatorium)—My qualifications for discussing this paper are few except for two reasons: First, in discussing sympathectomy with Dr. Rienhoff last night, he told us about the case that Dr. Long has just mentioned, namely, one in which Dr. Rienhoff interrupted both the sympathetic trunks and both vagi. This was done in a case of chronic pancreatitis and pancreolithiasis. The patient was a white man in his middle thirties, who for six or seven years had been admitted to numerous institutions for severe abdominal pain. Several years back, he was operated on by Dr. Rienhoff and a partial pancreatectomy and ligation of the duct was done. This afforded the patient practically no relief. His diabetes continued to become more severe. His emaciation was extreme due to the excruciating pain the patient endured upon eating. He had been driven to drink between two and three quarts of whiskey per day and about a year ago had become addicted to narcotics in tremendous doses of between fifteen and twenty grains of morphine per day. Following the interruption of both the sympathetic and parasympathetic pathways, patient was entirely and dramatically relieved of pain. In the year that has followed this operation, he has gained a tremendous amount of weight, uses no narcotics, and drinks moderately as society demands it. This case will be reported very soon in the literature, Dr. Rienhoff informed me.

We wonder if some of the symptoms as distention following vagotomy for peptic ulcer could be controlled by bilateral sympathectomy. This is undoubtedly true but I doubt it from a practical standpoint one would want to subject the patient to such major thoracoabdominal surgery for the prevention of distention which is only occasionally of serious nature.

My second qualification is simply that I spent sometime at Mayo's this past winter and heard the numerous discussions on vagotomy. Dr. Shands' paper has covered the subject thoroughly. Another thing, however, that was mentioned up there in the way of a complication, was that they had had at least one death and, if I am not mistaken, possibly two that could be directly attributed to the vagotomy. They were using this procedure mostly in conjunction with a partial gastric resection. The deaths mentioned were caused by perforation of duodenal ulcer in which the patient showed none of the characteristic signs due to pain, etc., since the nerves had been interrupted. One case died within a few weeks of the operation and the perforation was discovered only at autopsy. I think it happened in another case but I am not sure of this. As well as I can recall, a third case was saved by abdominal section when he presented the same findings that the two previous cases had done. This complication of silent perforation of the duodenum is just another complication that has to be taken into consideration.

Cancer of the Rectum

(Editorial Symposium)

WILLARD H. PARSONS, M.D.
Vicksburg, Mississippi

CANCER of the large bowel accounts for about 8 per cent of all the major malignancies. It occurs so frequently, and its consequences are so disastrous, that a periodic consideration of the subject is highly desirable.

The diagnosis of cancer of the rectum, and it is in the rectum that most of the malignancies of the large bowel occur, is not difficult. Eighty per cent of all cancers of the rectum can be felt by simple digital examination and essentially 100 per cent of all cancers of the rectum can be visualized through a proctoscope or sigmoidoscope. The history also is usually highly suggestive in that patients having cancer of the rectum almost invariably at one time or another, and frequently very early in the disease, complain of a change in bowel habit, of fresh blood on the stool, of the occurrence of tenesmus, and of what for lack of a better term is called "bowel consciousness." Obviously from the above if a person who has cancer of the rectum reasonably promptly after one or more of these symptoms first occurs, consults a competent and conscientious physician, the diagnosis will be established with utter certainty. The proper performance of a biopsy settles the diagnosis.

Of all the major cancers perhaps cancer of the rectum offers as good a prognosis as any major malignancy and better than most. The results of proper treatment of this disease are incomparably superior to those achieved for cancer of the stomach, or of the lung and compare favorably with the results of treatment of cancer of the breast.

The categoric statement can be made that cancer of the rectum is a surgical disease, and even the patient with advanced cancer of the rectum fares better with surgery than with any other variety of management. In the order of desirability, though by no means always in the order of availability, the treatment of cancer of the rectum may be stated to be 1) radical anterior resection of the rectum with preservation of the sphincter, 2) radical one-stage abdomino-perineal resection, 3) radical two-stage abdomino-perineal resection, 4) permanent colostomy with subsequent posterior resection of the rectum.

I deliberately omit simple colostomy as a treatment for this disease because I think that comparatively few rectal cancers actually obstruct the bowel and these patients, therefore, ordinarly do not need colostomy except as it may be used concomitantly with abdomino-perineal or posterior resection.

The surgeon electing to treat patients for cancer of the bowel must have a precise knowledge of the anatomy and of the physiology of the bowel, and must have developed the technical skill that so formidable an operation requires and must have adequate well trained and experienced help. Under those circumstances about 90 per cent of the patients having cancer of the rectum will be found suitable for radical operation. In my own experience during the past five years the immediate mortality incident to surgery has been 6 per cent, and the three to five years "cure" has been 50 to 60 per cent.

Cancer of the rectum is a disease which untreated, or improperly treated, will result in painful, prompt, and permanent exitus of the patient. The symptoms are so clear-cut, and the diagnosis so easily established that there is little excuse for delay in coming to a correct conclusion regarding the presence of this malady. The prognosis will be greatly improved if patients can be trained to report to their physicians on the development of symptoms and if the physicians will faithfully carry out adequate studies of such patients, and provide adequate surgical treatment as soon as the diagnosis is established.

Retropubic Prostatectomy: an Improved Approach in the Surgical Treatment of Prostatic Obstruction

(Editorial Symposium)

THOMAS D. MOORE, M.D.
Memphis, Tenn.

In the past, three standard surgical procedures have been employed in the relief of prostatic obstruction, namely prostatectomy by the suprapubic and perineal routes and transurethral prostatic resection. For many years the two-stage suprapubic prostatectomy was generally regarded as the operation of choice following the technics and improvements advocated by such pioneers as Goodfellow, Fuller and Freyer. The operation involved the insertion of a suprapubic tube for the purpose of preliminary drainage and at a later date the suprapubic sinus was dilated, permitting a blind digital enucleation of the gland. The operative wound usually healed slowly by secondary intention and patients commonly spent an average of six or eight weeks in the hospital postoperatively.

In the operation of primary suprapubic prostatectomy preliminary suprapubic drainage was omitted and reliance was placed on continuous urethral catheter drainage designed to improve renal function and control urinary infection so frequently associated with residual urine. At operation good visualization of the vesical neck was obtained, affording more accurate removal of the obstructing gland and more effective hemostasis. An outstanding exponent of primary suprapubic prostatectomy was the late Verne C. Hunt, who reported one series of 172 consecutive cases with only one death.

The advantages of perineal prostatectomy were widely proclaimed by the late Hugh H. Young, who perfected the technic of the operation and through the years subjected many patients to the procedure with a very low mortality rate and excellent functional results. Many urologists who had their training under his preceptorship are yet performing the operation throughout the country for prostatic obstruction, both benign and malignant.

The transurethral correction of prostatic obstruction was really placed on a rational basis by the introduction in 1909 of Young's cold punch, which was designed primarily for the eradication of median bar and small median lobe types. Several years later John R. Caulk improved this means of dealing with vesical neck obstructions of these types by the development of his cautery punch. About twenty years ago Maxmilian Stern devised an instrument for the resection of more pronounced types of prostatic obstruction, employing a loop electrode and cutting current, a serious defect of which was the inability to control hemorrhage. The instrument was improved by T. M. Davis and later by Joseph F. McCarthy, providing more effective means of controlling bleeding and permitting the transuretheral removal of the larger types of prostatic obstruction with a minimum of risk. William F. Braasch and Hermon C. Bumpus improved the Braasch punch, rendering it possible to employ this instrument in obstructions of the intra-urethral and intravesical lateral lobe types. Further evolution of the transurethral approach was incorporated in the resectoscope designed by Gershom J. Thompson, which employs the cold punch principle with a minimum of electrocoagulation and therefore less sloughing, less infection and a smoother postoperative convalescence. In recent years many urologists have come to recognize that in cases in which the gland is greatly enlarged enucleation of the obstruction is preferable to transurethral resection because in such cases the latter procedure may require multiple stag operations involving more blood loss, inviting more complications, requiring a longer convalescence and perhaps not as satisfactory functional results as would be attained in a clean primary enucleation.

In 1945 Terence Millin of London, after observing the excellent exposure of the prostate in prostatocystectomy for carcinoma of the bladder, as described by Hinman, conceived the idea that an obstructing prostate could be enucleated through the retropubic space after incising the prostatic capsule. The operation compares in some respects to a perineal enucleation except that the approach is from above or anterior rather than through the perineum. Millan's perfection of this means of removing enlarged prostates, both benign and malignant, is now recognized as a great advance in prostatic surgery. Since August 1945 he has performed the operation in more than 400 cases with a high percentage of satisfactory functional results and a relatively low mortality rate. The chief advantages of the procedure are based on the fact that the bladder proper is not incised nor is suprapubic drainage instituted. The prostatic capsule, an immobile structure, heals more kindly than an incision in the bladder, a distensible organ. The opening in the anterior prostate capsule is closed tightly and upon removal of the inlying catheter three to six days postoperatively normal bladder function is usually experienced and the suprapubic incision heals per primam. The usual period of postoperative hospitalization compares favorably to that of transurethral prostatic resection, averaging about ten days. The technic of retropubic prostatectomy is somewhat more difficult to learn than suprapubic removal of the prostate gland but is less difficult to master than transurethral resection. Compared to perineal prostatectomy the hazard of injury to the lower rectum is largely avoided and such grievous complications as urethrorectoperineal fistula are practically unknown. In fact, since Millan's presentation of this subject at the annual meeting of the American Urological Association in Buffalo, New York, in July 1947, many urologists throughout the country have performed retropubic prostatectomy in a series of cases with gratifying results. It is the impression now that in the hands of many this operation will supplant to a great extent both suprapubic and perineal prostatectomy as well as the transurethral approach in greatly enlarged prostates. Since July, 1947 in my private practice and on the urological service of the John Gaston Hospital of the University of Tennessee School of Medicine, the procedure has been carried out on 41 patients with satisfactory functional results in all of them and without a mortality.

The prevesical or retropubic space traditionally has been forbidden territory for surgical work as infection in this area has usually been of serious moment. Millan boldly made use of the prevesical space for this new approach to the prostate and with the advantages of modern chemotherapy and the antibiotics, together with meticulous aseptic care, the fear of infection in this space has been greatly minimized. It is quite possible that as time goes on the rational treatment of prostatic obstruction, depending upon the size of the gland, will be a choice between retropubic prostatectomy and transurethral prostatic resection.

At a recent meeting of the House of Delegates of the American Medical Association in Cleveland, Ohio, Dr. Archer C. Sudan of Colorado was named "family doctor of the year." The citation was given for meritorious service to his community and the reward was a gold medal. For twenty-one years he was the only doctor in a county of 1867 square miles, with a population of about 100.

We wish to commend the American Medical Association for this fine move on its part. In this country of ours there are multiplied hundreds who belong to this noble band of servants to humanity. When the records are read from the Book of Service many will be the names recorded by the Unbiased Secretary.

This citation is a radical departure from the customary rule in the American Medical Association, but it is a happy and thoughtful one. Occasionally a man of this type should be honored with the presidency of the greatest medical association on earth—one that is really beginning to function in fine order. The custom has been, heretofore, to elect the biggest specialist from the biggest city to the the biggest honor—and oftentimes he may not have been the biggest man from the standpoint of service in our great organization. It is the effort we make against the odds that should count.

POSTGRADUATE COURSE IN DISEASES OF THE CHEST

The American College of Chest Physicians, Pennsylvania Chapter, and the Laennec Society of Philadelphia are sponsoring a postgraduate course in diseases of the chest to be held during the week of March 15-20, 1948, at the Warwick Hotel, Philadelphia, Pennsylvania.

Further information may be secured at the office of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The Mississippi Doctor

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The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

DOCTORS IN MISSISSIPPI!

I have written thousands of letters to you. I have asked, requested, pled, and begged for your pictures and personal data. The task has been laborious and expensive to me. It was undertaken as a service to **you.** Unless **you** do **your part** I can not succeed. To me, failure would be a bitter disappointment. Will you not, as a personal favor to me, forward this material to me at once? Please do so and do it NOW. I ask this favor in the name of friendship.

Yours sincerely,
G. S. Bryan
Amory, Mississippi.

You have noted in the November issue of THE MISSISSIPPI DOCTOR the fine list of exhibitors at the Mid-South Postgraduate Medical Assembly. Visit their booths and tell them that you are glad they came. They are friends to the assembly, and they have the same noble purpose that the doctors have. They want to serve you, and in turn, serve the people. They are the big factor in financing our association and keeping it going in a big way.

Dr. H. B. Gotten will be in charge of the Mid-South as secretary since the death of our beloved Dr. A. F. Cooper. He was his assistant. Dr. Gotten will do the job well. He is active, courteous, considerate, and efficient. Give him a cordial and a helping hand.

Memphis is a fine place for a medical meeting. It has one of the best and most practical medical schools in the United States. The medical profession there is able and has a most cordial spirit. The Peabody Hotel, along with all the others, is charged with Southern cordiality that makes all doctors love to go to the Mid-South for information, for inspiration, and for good fellowship.

FROM DR. BRYAN

Another year has come and gone. Although I could not attend the medical meetings of 1947 and in that way keep abreast of medical progress,I want my friends and co-workers to know that my interest in them and in medicine is in no way abated. I am still interested in the science of medicine and medical organization.

It seems that a very thorough survey of needs of the state as regards the development of the hospital situation and the supply of physicians has been made. In thorough sympathy with the movement to establish a medical college to equal the best to be found anywhere, I see no reason why this can and should not be done. But I am anxious that our young men should be taught medicine, both as a science and as an art. My impression is that our young doctors are being taught the science of medicine perfectly but they seem to be wholly lacking when it comes to the practical application of their scientific training. There is something lacking in the hospital training they are getting. The patients that these young men see are little different from guinea pigs—no personal or friendly touch existing between patient and physician. There is no place where this can be developed and experienced so well as in a rural district, where none of our young men seem to be willing to take this necessary training. Something should and must be done about this if the best work possible is to be done by the coming generation of doctors. The teaching that is being done does not give these young men a square deal. No one is qualified to do this kind of teaching so well as old men who have grown old in the private sick room. Yet men of this type are not wanted in our class rooms. Young men of no practical experience are chosen. It is well enough, perhaps, for the primary years to be turned over to teachers of good scientific qualifications, but do give us teachers who have had years of practice in the homes of the common people to teach the upper classes. Again our young men should be taught that all men can not be specialists. We need a few, a very few, specialists. But please give us many all-round general practitioners, men who are capable of taking care of the health of our families.

Another thing should be taught and impressed upon our young men is that medicine is not and should not, be undertaken as a money-making avocation. It is and should always be regarded as service to be rendered mankind, and where friendships can be formed that will last throughout life, both between doctors and patients. There is a changed and changing feeling growing up in the public mind. It pains me unspeakably to hear someone say, almost every day, "Medicine has become a racket of the most blatant kind. It is simply a scheme whereby the people can be robbed." This must be stopped if we doctors are to remain a decent class of men and are to hold our self-respect. Again there is a trend in our societies and associations that leads me to fear that they are slipping. There was a time when our own district society stood out as a marvelous illustration that all doctors are brethren and we loved each other as such. Our programs were splendid, given by men who were members, and meant to benefit the general man who held membership with us, not to exploit some whom they felt were inferior to their listeners. I fear that the trend is away from this standard. Some even now hold that most of our meetings should be held at the University and that the essayists should be teachers in some medical school—this for the benefit of the few boys who might be students in the medical department of the University. I disagree. Let our boys have the very best teachers that can be found. But our society meetings should be for the benefit of the old fellows who are out in the woods doing the best they can for the thousands of people back there who get sick and should have all the help we can give them. G. S. B.

News and Comment

MAX D. LINDSAY, M.D.

Max D. Lindsay, M.D., who will preside over the meeting of the Mid-South Medical Assembly at Memphis in February, is a resident of Spring City, Tennessee, where he does general practice and surgery. He was graduated from the College of Medicine, University of Tennessee, in 1931, where he was a member of the Phi Rho Sigma Medical fraternity.

After interning at the Memphis General Hospital from January, 1932 until July, 1933, he served as assistant resident in pathology at this hospital until July 1934. He then spent successive years as resident in pathology at General Hospital, resident in medicine at John Gaston Hospital, assistant resident in surgery, and finally resident in surgery, leaving this last post in July, 1938.

For the past ten years Dr. Lindsay has been busy with general practice and surgery in Spring Hill, Tennessee. He serves as a staff member of the Chamberlain Memorial Hospital in nearby Rockwood, and holds membership in the Chattanooga and Hamilton County Medical Society and in the Tennessee State Medical Society.

Dr. Lindsay is also an alert citizen of his own community, being a member of the Kiwanis Club and a Shriner.

Dr. A. F. Cooper, probably the best-known physician in the Mid-South and a very popular man, is no more. The meeting in Memphis at the Peabody in February will be different without him. In the technique of handling a program he was a master. No one little thing escaped his observation. With him behind it the program carried through smoothly, easily, and on time. He was a great diplomat, a keen observer, and possessed the keenest sense of humor. He drank deep from the fountain of human philosophy. He was a versatile man, an able teacher, and he possessed the happy faculty of entering into the pleasures and joys and sympathy of the people. He was easy of manner, suave, handsome, and dignified.

Dr. Arthur Ferdinand Cooper, a native of Trenton, Tennessee, was born in 1881. He graduated from Vanderbilt University School of Medicine in 1904 and took postgraduate work at Harvard University. He was secretary of the Shelby County Medical Society for thirty-four years and was, at the time of his death, an immediate past president of this society. He was executive secretary and treasurer of the Mid-South Postgraduate Assembly for more than twenty years. Dr. Cooper was also a Fellow of the American Medical Association.

ANNOUNCEMENT

Ford S. Williams, M. D., announces the opening of his office at 719 Carlisle Street, opposite Baptist Hospital, Jackson, Mississippi. Practice limited to diseases of the skin.

A turning point has now been reached in the chemotherapy of tuberculosis. Although streptomycin may not be the final answer in the treatment of this scourge of mankind—and I hope that it is not—it has opened a new path, a path of antibiotic approach to chemotherapy, an approach sought since the discovery of the bacterial nature of the disease; the control of tuberculosis may finally materialize and thus advance man one step further in his battle against disease and epidemics. —Selman A. Wakeman, D.Sc., Ph. D.

A final diagnosis of tuberculosis should not be made on the first x-ray film, since a disturbing number of cases showing definite infiltrations of the lung fields will be found to have cleared completely on a re-examination two weeks later. —Joseph D. Wassersug, M.D.

NORTHEAST MISSISSIPPI MEDICAL SOCIETY

The Northeast Mississippi Medical Society held its quarterly meeting in Houston, January 8.

Dr. W. A. Evans, Aberdeen, made a motion, which carried unanimously that Dr. J. Rice Williams of Houston and Dr. G. S. Bryan of Amory be elected to membership in the Fifty-Year Club. Two committees were then selected, with Dr. W. H. Anderson of Booneville representing the medical society as chairman, and the other members representing the church, the towns of Houston and Amory, the Masons, Order of Eastern Star, and the Auxiliary. The purpose of these committees is to arrange meetings in Houston and Amory honoring Dr. Williams and Dr. Bryan, respectively, for the more than fifty years of medical service in these areas.

Dr. Williams' presentation will be made January 25 at 7:00 p.m. at the Methodist Church in Houston. A similar program honoring Dr. Bryan will be held Sunday night, February 1, in Amory.

Keep these dates in mind, give these noble men a ring, send a telegram, or best of all, be present at the celebration. Too much could not be said or done for these men who have given half a century in selfless service.

A TRIP TO MERIDA, YUCATAN AND GUATEMALA

The New Orleans Graduate Medical Assembly is sponsoring an interesting visit to Latin America, planned to follow the 1948 Assembly meeting. On Saturday, February 28, a party composed of doctors and their wives, will leave by Pan American Clipper for Merida, Yucatan. After a four-day visit they will fly to Guatemala City, Guatemala. While in Merida many places of medical and historical interest will be visited, including some of the best preserved ruins of the Mayan empire and civilization.

Following these delightful days of companionship and sightseeing, a medical program will be presented in Guatemala City. The sightseeing schedule will then continue in various directions from Guatemala City, the last day and a half of the trip being unscheduled to permit additional side trips or entertainment in the city as may be desired.

Details and a complete itinerary are available at the office of the Assembly, Room 105, 1430 Tulane Avenue, New Orleans.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology, Vol. 45; No. 5, May, 1942

MOLLUSCUM CONTAGIOSUM M. AND B. 693. James Sommerville, Brit. J. Dermat. 53:255, (August-September) 1941.

Eight patients with molluscum contagiosum were treated with sulfapyridine (2-/paraaminobenzenesulfononamido/-pyridine). In six of these the disorder cleared up completely, and in the cases of the other two treatment was suspended early owing to toxic upset. The author does not suggest that this treatment should replace the easy and convenient local measures already in use, but presents this report to show that sulfapyridine has a definite lethal effect on the causative virus of molluscum contagiosum.

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DERMATITIS FROM CUTTING OILS. Louis Schwartz, Pub. Health Rep. 56:1947 (October 3) 1941.

Cutting oils are the most frequent causes of dermatitis among machinists and metal workers. Cutting oils are divided into two large groups, the insoluble and the soluble. The soluble oils in general consist of mineral oil, soap and volatile matter and are used mainly as cooling agents. The insoluble oils consist principally of mineral oil, fatty oil, sulfur and chlorine and are used mainly as lubricants.

All petroleum oils have the property of defatting the skin. All oils may plug up pores of the skin and form comedos. The chlorine and sulfur content may irritate the skin. The vegetable oils, especially when rancid may irritate or sensitize the skin of some workers. Inhibitors, such as phenols, cresols and nitrobenzene, added to cutting oils to prevent rancidity, may act as sensitizers and cause allergic eczema.

Comedos, folliculitis, boils and carbuncles and infected wounds of the skin caused by metallic slivers are common in workers using cutting oils. Drying, fissuring and cracking of the skin often result from the defatting action of the oils. Allergic eczemas are caused by hypersensitivity to animal or vegetable oil, or inhibitor, but are rather infrequent. Mineral oils undoubtedly cause a few cases of cancer of the skin, but fortunately the mineral oils of North America are low in carcinogenic properties.

Prevention of dermatitis from cutting oils consists chiefly in cleanliness of the person, of the clothes, of the machines and of the oil. Protective ointments should be composed of animal or vegetable fat to prevent the entrance of the mineral oil into the pores of the skin.

PEDIATRICS

TETANUS—Nelles Silverthorne, University of Toronto and the Hospital for Sick Children Toronto, Ont., Canada, Journal of Pediatrics 30:195-98, Feb. 1947, and Quarterly Review of Pediatrics, Vol. 2, No. 3, August 1947.

"During the past twenty-five years, seventy children with tetanus have been treated. In most, the source of infection was a scratch, cut or punctured wound. In fifteen there was no history of injury. The shorter the incubation period and the more rapid the invasion period, the more likely was the patient to die. The incidence was highest during the summer.

Patients were kept in a quiet, darkened room. Seconal was used for sedation. Wounds were thoroughly cleansed. Fluids when not tolerated orally were given intravenously. Tetanus antitoxin was given intramuscularly, since antitoxin by the intravenous route may produce reactions similar to anaphylactic shock. The use of antitoxin intrathecally was condemned as unsound and dangerous. The dosage of antitoxin ranged from 40,000 to 300,000 units.

The case fatality rate for the whole series was 47 per cent, with time distribution as follows: 1921 to 1928, 66 per cent; 1929 to

1935, 55 per cent; 1936 to 1946, 28 per cent. The decline in mortality is attributed to improved giving of antitoxin, better nursing, use of seconal, and the relative mildness of the attack in many of the more recent patients.

Tetanus toxoid is recommended as a routine prophylactic measure at the times when diphtheria toxoid and whooping cough vaccine are given."

Comment: The article on tetanus is most interesting and it just goes to show what may be accomplished with good treatment in such cases. We recently had a case of tetanus and treated it along the same lines as this. It was a little girl about seven years old who made a very nice recovery. When we first saw her, we certainly had very little hopes for her.

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EFFECT OF PENICILLIN IN THE TREATMENT OF INFANTILE CONGENITAL SYPHILIS. FURTHER OBSERVATIONS, R. V. Plateau, A. J. Hill, Jr., N. R. Ingraham, M. S. Goodwin, E. E. Wilkinson and A. E. Hansen, Tulane University School of Medicine, New Orleans, La., and the University of Pennsylvania School of Medicine, Philadelphia, Pa., the Johns Hopkins University School of Medicine, Baltimore, Md., and the University of Texas School of Medicine, Austin, Texas, American Journal of the Diseases of Children, 72:635-48, December 1946.

"The cases of manifest congenital syphilis in children under two years which have been treated with penicillin by these observers now number 191. Among these are 84 Negro boys, 84 Negro girls, 10 white boys and 13 white girls. The mean age at start of treatment was 164 days with range from 11 days to 23 months. No therapy other than intramuscular injection of penicillin has been used. Dosages ranged from 770 to 150,000 units per kilogram. The smallest total dosage received by any infant completing treatment was 12,000 units per kilogram. Since the beginning of these studies in 1943, the content of impurities in penicillin has steadily declined and the relative contents of fractions G, F, X and K have varied so that the therapeutic efficacy of penicillin may be significantly different today from what it was originally.

During the course of treatment febrile reactions were observed in 46 per cent. Eight other reactions occurred: 1) A pre-existing convulsive disorder was aggravated; 2) A possible case of syphilitic nephritis occurred; 3) Persistent hyperemesis for three days was observed; 4) A cutaneous Herxheimer reaction with nearly fatal collapse was seen; 5) and 6) two cases of transient urticaria appeared; 7) and 8) cutaneous lesions were accentuated and dactylitis appeared.

The results of treatment were dramatic, with rapid disappearance of spirochetes (dark field) and resolution of skin and mucosal lesions within three days. Healing apparently was more rapid with penicillin than with arsenicals. The longer the period of observation the larger the percentage of cases which became seronegative. Serologic relapse alone was observed only six times. Clinical together with serologic relapse was encountered five times. Twenty-four infants died during or after treatment. In 18 of these, evidences of syphilis had improved or disappeared. Other causes at least contributory to death were demonstrated in each case studied. No death appeared to be related to the use of penicillin or to therapeutic shock.

From these results it is concluded that penicillin is the best single agent for the treatment of infantile congenital syphilis. It is recommended that the dosage be at least 100,000 units of penicillin per kilogram of body weight divided into 120 equal intramuscular injections and given at intervals of three hours. Reactions have been unimportant. No need for gradual increase of dosage at onset of treatment has been demonstrated."

Comment: The article on the subject of infantile congenital syphilis is quite interesting. It was our privilege to hear this discussion at the American Medical Association. It it quite interesting and most valuable and it gives us pleasure to abstract this for the medical profession of Mississippi.

To be courteous does not take much time, but it takes a little. He who would be courteous must not be in such haste that he can not be sympathetic, nor so absorbed that he can not be considerate of others.

A hundred men may make an encampment, but it takes a woman to make a home.
—**Chinese Proverb.**

Reason is the power to weigh, to measure, to turn and overturn. The problems of life and adjustments in life's relationships are directed by trained power of reason.

State Board of Health

Felix J. Underwood, M. D.

MASS X-RAY SURVEY IN WASHINGTON COUNTY, 1946

Tuberculosis Control Unit of the Mississippi State Board of Health in Coöperation with The Commonwealth Fund

C. C. SMITH, M. D., Supervisor
Tuberculosis Control Unit

Surveys in other states have shown that x-ray examinations of large population groups will lead to the discovery of cases of tuberculosis that would otherwise go unrecognized. For this reason the Mississippi State Board of Health in 1946 incorporated mass x-ray surveys into its tuberculosis control program. This program, as now constituted, includes x-raying of community groups, industrial populations, and students in high schools and colleges. In order to make large numbers of chest x-rays rapidly and economically, a mobile unit equipped for making 70 mm. films was obtained. The first project undertaken was a community-wide survey in Washington County. This county was selected because it is located in the Mississippi Delta where a large proportion of the population is colored and where tuberculosis is a major health problem. In addition, the county had an organized local heath unit whose personnel were capable of handling the follow-up of tuberculosis patients discovered in the survey.

An educational program of general community organization was carried on for two months before the first x-rays. Local committees and civic organizations assumed the major part of the responsibility for publicizing the work and scheduling examinations of population groups within the county. The first chest films were made in this area on May 1, 1946 and the mobile unit remained in the county approximately two and one half months.

According to the 1940 census Washington County had a population of 67,576 of which 18,568 or 27.5 per cent were white and 49,008 or 72.5 per cent were colored. Tuberculosis mortality rates in this county have declined in the past as they have for the state as a whole. In the five years prior to the survey, however, the death rate in Washington County from tuberculosis of 49.2 per 100,000 population was still higher than that for Mississippi of 38..8. The average annual tuberculosis death rates per 100,000 population for Washington County and Mississippi for five-year periods from 1926 through 1945 were as ollows:

TABLE I

	Washington County	Miss.
1921-25	108.7	99.9
1926-30	78.9	89.8
1931-35	77.8	64.3
1936-40	76.4	53.0
1941-45	49.2	38.8

In Mississippi during the past 26 years, the tuberculosis death rates per 100,000 population have definitely been on the decline. On the charts below, the non-white death rate was consistently higher than that for the whites, both for Mississippi and for Washington County. The non-white group, however, shows a greater decline in tuberculosis death rates than the white group during the past 26 years. In the state, the non-white rate declined from 163.3 in 1921 to 44.5 in 1946. In Washington County, the decline has been less regular and less pronounced for the 26 year period. The rapidly diminishing non-white rate since 1940 may be associated with population estimates calculated for the war years. No reliable figures are available for the county during this time and it is possible that growth of the negro population has not followed the pre-war trend.

During the two and one half months of the survey, 20,560 persons had an examination with the 70 mm. x-ray.[1] This number represented about 30 per cent of the total population in the area. Since very little reinfection type tuberculosis occurs in individuals under 15 years of age, a special effort was made to obtain examinationis of persons 15 years of age and over. Of the 20,568 examinations, 20,-

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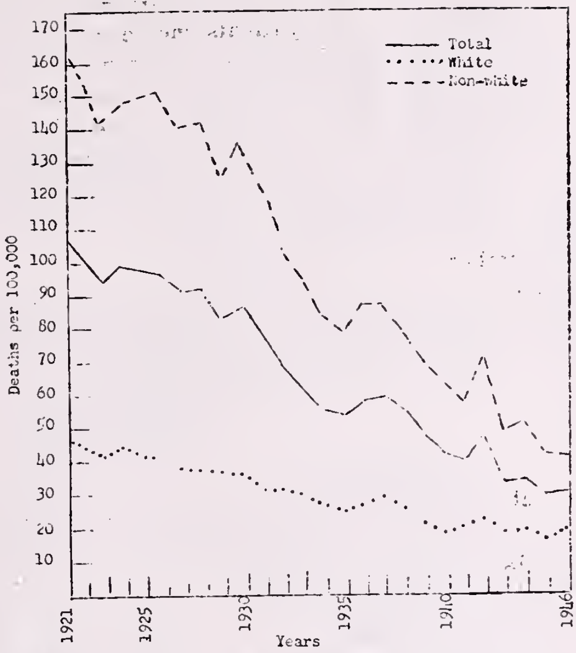
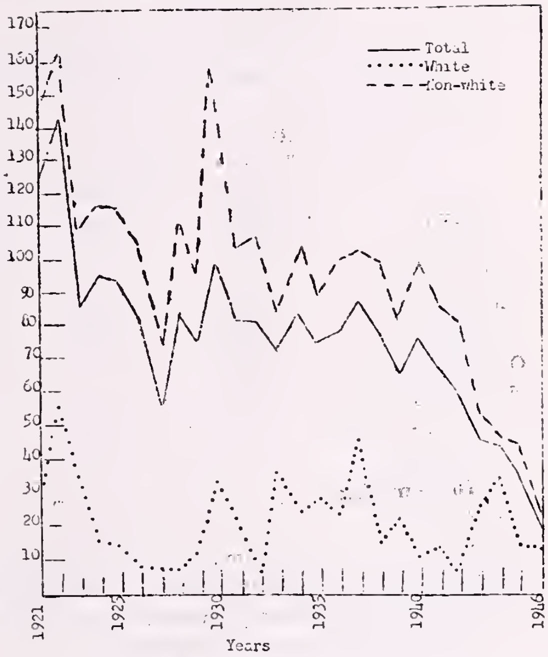
[1] This total does not include unsatisfactory films nor does it include more than one 70 mm. x-ray per person.

White and Non-white Deaths from Tuberculosis per 100,000 Population by Years, 1921-1946, Mississippi



White and Non-white Deaths from Tuberculosis per 100,000 Population by Years, 1921-1946, Washington County



291 were of individuals in this adult age group. This means that approximately 42 per cent of the total population 15 years and over were reached by the mass x-ray survey. A larger proportion of the white than of the non-white population availed themselves of this diagnostic service. As shown in Table 2, 52.0 per cent of the white and 38.2 per cent of the non-white population 15 years of age and over had small film x-ray examinations.

TABLE II

COLOR AND SEX	TOTAL			15 YEARS OF AGE AND OVER		
	Population*	Examined		Population*	Examined	
		Number	Per cent		Number	Per cent
Total	67,576	20,568	30.4	48,300	20,291	42.0
White	18,568	7,089	38.2	13,328	6,929	52.0
Male	9,383	3·175	33.8	6·750	3,107	46.0
Female	9,185	3,914	42.6	6,578	3,822	58.1
Non-white	49,008	13,479	27.5	34,972	13,362	38.2
Male	23,908	6,118	25.6	16,842	6,070	36.0
Female	25,100	7,361	29.3	18,130	7,292	40.2

*1940 census

In Table III the number and the percentage of population examined are given for 3 urban communities and the remainder of the county. In Greenville, the county seat, which had a population of 20·892 in 1940, 47.1 per cent of the residents were examined. In Hollandale, a small town of 1,606 population, an unusual coverage was obtained and 69.2 per cent of the residents were examined. In Leland the percentage that was examined was 51.9. The remainder of the county includes Arcola, Chatham, Glen Allan, Wayside, and Winterville (all small communities of less than 750 population) and the rural area. Only 18.2 per cent of the population in this group were examined in the survey.

TABLE III

Number and Percentage of Population Examined in Mass X-ray Survey, by Residence

RESIDENCE	Population	TOTAL Examined	Per Cent
Total	67,576	20,568	30.4
Greenville	20,892	9,848	47.1
Leland	3,700	1,921	51.9
Hollandale	1,606	1,112	69.2
Remainder of County	41,378	7,548	18.2
Out of County		91	
Not stated		48	

*1940 census

All 70 mm films were interpreted in the State Board of Health. Tentative diagnosis on the basis of the small films were as follows:

- Tuberculosis, probably active
- Tuberculosis, probably inactive
- Primary active
- Suspicious of reinfection tuberculosis
- Pulmonary calcification
- Other lung pathology
- Pathology of the heart
- Other pathology
- Negative

Of the total 20,568 examined, 916 or 4.5 per cent received tentative diagnosis other than negative. Tentative diagnosis of tuberculosis or suspicious of reinfection tuberculosis were made on 285 or 1.4 per cent of the individuals examined. Forty persons had a diagnosis of calcification and other lung pathology, 81 were found to have other pathology, and, for 510, tentative diagnoses were withheld because of difficulty in interpreting the small films. Reports of tentative diagnosis were returned to the local health department. Individuals having diagnoses other than negative were advised by the local health department of the existence of some pathology. Those with cardiac and other pathology (non-pulmonary) were asked to consult their private physician for further examination and treatment. All patients with tentative diagnoses of pulmonary pathology were given an appointment for re-examination with a 14 x 17 inch film in the health department described above.

Approximately three-fourths (76.3 per cent) of the patients with tentative diagnosis other than negative actually returned for re-examination by 14 x 17 inch film as shown in Table IV. Reasons for failure to obtain re-examinations on all these patients included death of the patient, physical disability, removal from the county and, insufficient address for the follow-up by the health department. This illustrates the need for immediate follow-up and early examination of patients.

TABLE IV

Number and Percentage of Persons with Tentative Diagnosis Other than Negative in Mass X-ray Survey Having Re-examination with 14x17 Inch Film

TENTATIVE DIAGNOSIS	NO.	RE-EXAMINED NO.	%
Total other than negative	916	699	76.3
Tuberculosis or suspected tbc.	285	220	77.2
Calcification and other lung pathology	40	27	67.5
Other Pathology	81	46	56.8
Diagnosis withheld	510	406	79.6

After re-examinations were obtained, final diagnoses were made in the State Board of Health from the reading on the 14 x 17 inch films.[1]

For the individuals who failed to return for re-examination, final diagnoses, for statistical purposes only, were made from a review of the individual records.

In Table V are given the final diagnoses of the 916 patients with tentative diagnosis other than negative. A total of 22.6 per cent of these persons were found to have reinfection type tuberculosis and an additional 2.9 per cent were diagnosed as suspicious of reinfection tuberculosis.

In Table VI, the number and percentage of persons examined in the mass survey with final diagnosis of reinfection tuberculosis are given by color and sex in age groups. Of the total 20,568 persons examined, 207 or 1.0 per cent had a final diagnosis of reinfection tuberculosis. Of these 207 individuals, 65 were white and 142 were non-white. In the group 15 years of age and over, 205 individuals or 1.0 per cent of the total 20,291 examined were

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[1] Although it is recognized that the diagnosis of tuberculosis should be based on clinical studies and laboratory tests as well as on x-rays, because of the paucity of diagnostic facilities these final diagnoses were necessarily based on roentgenological evidence alone.

TABLE V
Final Diagnosis of 916 Persons Having Tentative Diagnoses Other Than Negative in Mass X-ray Survey

TENTATIVE DIAGNOSIS	FINAL DIAGNOSIS								
	Pos. for Reinfection Tuberculosis			Suspicion of Reinfection Tuberculosis		Other Pathology		Negative	
	TOTAL	NO.	%	No.	%	No.	%	No.	%
Total, other than negative	916	207	22.6	27	2.9	149	16.3	533	58.2
Tbc. or suspected tbc.	285	151	53.0	19	6.7	12	4.2	103	36.1
Calcification and other lung pathology	40	3	7.5			27	67.5	10	25.0
Other pathology	81	2	2.5	1	1.2	59	72.8	19	23.5
Diagnosis withheld	510	51	10.0	7	1.4	51	10.0	401	78.6

TABLE VI
Percentage of Persons Examined iin Mass X-ray Survey with Final Diagnosis of Reinfection Tuberculosis, by Age and Color

AGE	TOTAL			WHITE			NON-WHITE		
	Examined	Positive	Per Cent	Examined	Positive	Per Cent	Examined	Positive	Per Cent
Total	20,568	207	1.0	7,089	65	0.9	13,479	142	1.1
Under 15	277	2	0.7	160	1	0.6	117	1	0.9
15 and over, total	20,291	205	1.0	6,929	64	0.9	13·362	141	1.1
15-24	4,939	15	0.3	1,727	3	0.2	3,212	12	0.4
25-34	4,467	25	0.6	1,695	9	0.5	2,772	16	0.6
35-44	4,512	37	0.8	1,626	12	0.7	2,886	25	0.9
45-54	3·153	52	1.6	1,017	20	2.0	2,136	32	1.5
55-64	1,925	37	1.9	562	13	2.3	1,363	24	1.8
65 and over	1,236	39	3.2	288	7	2.4	948	32	3.4
Unknown	59			14			45		

diagnosed as positive for reinfection tuberculosis.

In the white population examined, 65 or 0.9 per cent of these persons were found to have reinfection tuberculosis was discovered in the white population, 15 years of age and over.

In the non-white population examined, 142 or 1.1 per cent of these individuals were found to have reinfection type tuberculosis. There is no evidence of any real difference in infection rates by race. In this survey, the prevalence rate of tuberculosis increased with age in those persons 15 years of age and over.

TABLE VII

Percentage of Persons Examined in Mass X-ray Survey with Final Diagnosis of Reinfection Tuberculosis, by Color and Sex

SEX	TOTAL Examined	 Positive	 Per Cent	WHITE Examined	 Positive	 Per Cent	NON-WHITE Examined	 Positive	 Per Cent
Total	20,568	207	1.0	7,089	65	0.9	13,479	142	1.1
Male	9,293	112	1.2	3,175	41	1.3	6,118	71	1.2
Female	11,275	95	0.8	1,914	24	0.6	7,361	71	1.0

TABLE VIII

Percentage of Persons Examined in Mass X-ray Survey with Final Diagnosis of Reinfection Tuberculosis, by Type and Color

TYPE OF PROJECT	TOTAL Examined	 Positive	 Per Cent	WHITE Examined	 Positive	 Per Cent	NON-WHITE Examined	 Positive	 Per Cent
TOTAL	20,568	207	1.0	7,089	65	0.9	13,479	143	1.1
Plantation	7,085	84	1.2	976	10	1.0	6,109	74	1.2
Community	10,391	103	1.0	4,827	43	0.9	5,564	60	1.1
Industry	1,373	14	1.0	463	8	1.7	910	6	0.7
School	1,719	6	0.3	823	4	0.5	896	2	0.2

TABLE IX

Percentage of Cases of Tuberculosis Discovered in Mass X-ray Survey That Were Not Previously Known to the Health Department, by Color

	TOTAL Number	 Per Cent	WHITE Number	 Per Cent	NON-WHITE Number	 Per Cent
Total Cases	207	100.0	65	100.0	142	100.0
New Case, not previously known	182	87.9	58	89.2	124	87.3
Case, previously known to health department	25	12.1	7	10.8	18	12.7

TABLE X

Number of Cases Discovered in Mass X-ray Survey, by Stage of Disease and Activity

STAGE	ACTIVE	INACTIVE
Total	55	127
Minimal	13	67
Moderately advanced	26	54
Far advanced	16	6

On Table VII, the distribution by sex and race are shown. Infection rates for the males were higher than for the females in both races, although the difference in the non-white group may be due to chance.

Each person examined was classified according to the type of project through which he was brought for examination. For this area, 4 types of projects were used for classification—community, school, industry, and plantation. Of the total examinations shown on Table 8, 50.5 per cent were made in community projects, 8.4 per cent in schools, 6.7 per cent in industries, and 34.4 per cent in plantations. The rates of reinfection tuberculosis found in the plantation, community, and industry groups were approximately the same. The lowest percentage of tuberculosis was found to be in the school. The relatively low rate in the latter group is probably due to the young age groups x-rayed in this project.

One of the prime objectives of a tuberculosis mass survey program is to discover cases of tuberculosis which are not previously known to the local health department. In the Washington County survey 207 cases were found. As shown in Table 9, 182 of these cases were not recorded in the local health department before the survey. Of the 33 cases carried in the county's tuberculosis register prior to the survey, 25 of them were examined in the mass survey. Eleven of these persons were given tentative diagnoses on the basis of the 70 mm. readings and would not have been included in the cases of tuberculosis without a careful checking of the register and further investigation. Without this checking in the local health department it is possible that conflicting notices would be mailed to participants in a survey. Every effort should be made to avoid this situation and individual review of x-ray films and additional follow-up may be required.

Among the new cases found in the survey, 55 or 27 per cent were classified as active and 127 as inactive.

The tuberculosis register in Washington County prior to the survey apparently did not show the extent of infection present in the community. With only 33 cases recorded, an average of 35 deaths from this cause had been reported during each of the preceding 5 years, 1941 through 1945. This case load was increased from 33 to 215 through the mass survey the ratio of cases to deaths was about 0.9 to 1 and, after the survey was completed, the ratio was increased to 6.1 to 1. Assuming that cases of tuberculosis are present in the remainder of the adult population in the same ratio as was found in the surveyed group, the total number of cases in the county would be about two and one half times the number discovered and the ratio of cases to deaths would be about 14 to 1 in the adult population.

Studies in Framingham, Massachusetts, and in Cattaraugus County, New York, led to the assumption that for each annual death from tuberculosis about 10 active cases were living iln a community. It may not be too far wrong then to assume tnat there areabout 30 cases both active and inactive for every annual death. Under this assumption the estimated number of cases present in Washington County would be about 1,050.

The two major objectives of the tuberculosis control program are case-finding and adequate treatment of patients. Mass surveys are one of the methods devised for locating cases. They are not intended as a substitute for examinations of individuals with symptoms of tuberculosis nor for prompt examination and supervision of contacts to open cases. They are of limited value, even as a means of case-finding unless they are integrated with the general program for tuberculosis control and, after the location of cases has been accomplished, the treatment of patients must receive primary consideration.

SUMMARY

Mass x-ray surveys have been used successfully in several states to discover cases of tuberculosis not known to health agencies. Such a survey was made by the Mississippi State Board of Health during the summer of 1946 in Washington County.

Schedules were prepared in advance for groups of persons such as schools, industry, plantation, and community. X-rays were made on 20,568 persons, about 30 per cent of the population, during a period of two and one-half months.

Re-examinations were recommended for 916 persons whose 70 mm. films were interpreted as "other than negative" and 699 of these persons were re-x-rayed on 14x17 inch films. Films for the remainder of this group were revised and given a final diagnosis for statistical purposes only.

Of the 20,658 films, 207 showed evidence of reinfection tuberculosis. No significant differences were found for race or project groups with the exception of school children who showed a low percentage rate. In the adult groups (over 15 years of age) the rates increased with age. The rates for males were higher than for females in both racial groups.

The case load in Washington County was increased from 33 to 215 as a result of the survey.

Credit for much of the planning, and publicity for the survey is hereby extended to the Washington County Health Department, Sponsoring Committee, Steering Committee, Home Visitors, Newspaper Publishers and Radio Station in Washington County.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Sept. 1947	Sept. 1946	Sept. 5-Yr. Av.
Poliomyelitis	6	54	22.2
Bacillary Dysentery	11	454	645.4
Dengue	0	0	2.4
Diphtheria	50	52	62.4
Influenza	16	2279	1557.8
Measles	3	154	107.0
Meningitis (meningococcus)	0	4	4.8
Other Forms Meningitis	4	3	3.4
Pellagra	1	195	173.2
Pneumonia	43	898	535.8
Pulmonary Tuberculosis	153	185	161.0
Scarlet Fever	24	43	36.2
Smallpox	1	0	.4
Tularemia	11	5	5.0
Typhoid Fever	6	9	16.2
Typhus Fever	5	15	19.0
Undulant Fever	4	14	9.8
Whooping Cough	17	477	510.8

Woman's Auxiliary

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FROM THE PRESIDENT- ELECT

Who plans the meals?—Who tends the 'phone?
Who goes to church? (and all alone).
Who worries most?—Who wins the strife?
None other than the doctor's wife!

At the recent National Conference of Presidents and Presidents-elect in Chicago, the delegates were privileged to hear many outstanding doctors speak. It was very gratifying to be told by each one that the greatest single asset the A.M.A. has is the Woman's Auxiliary.

In unity there is strength and without organization there can be no unity. Many things will come up in our state this year which will call for an organized effort, if they are to be handled correctly.

The aim of our president is to double our membership. We now have 501 members. If each one will win one, we will reach our goal.

The time has come when the Auxiliary has so proved its worth that the question is not "Are you an Auxiliary member?" But 'Why are you not a member?" Can you give one reason for not being a member?

Greenville has organized, and we are expecting big things from the group. Greenwood has elected a chairman and will call an organization meeting this month.

The statement is often made in considering the organization of a medical auxiliary, "We are over-organized now, we belong to all the civic clubs and all doing health work through them. Why should we have a club for doctors' wives alone?" The answer is, We should keep health leadership where it belongs—with the profession. As a member of a medical auxiliary, a woman can speak with authority, and receive attention because she will have information which is authentic.

The price of freedom is eternal vigilance. Join an auxiliary and be informed.

(Mrs. J. K.) Louise Avent,
Organization Chairman

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The Woman's Auxiliary of the Northeast Mississippi Medical Society met at 2:00 p.m. on January 8 at the home of Mrs. J. Rice Williams in Houston. Delightful hospitality was extended by Mrs. Williams and her cohostesses, Mrs. G. G. Armstrong, Mrs. S. K. Gore, and Mrs. Thomas Gore.

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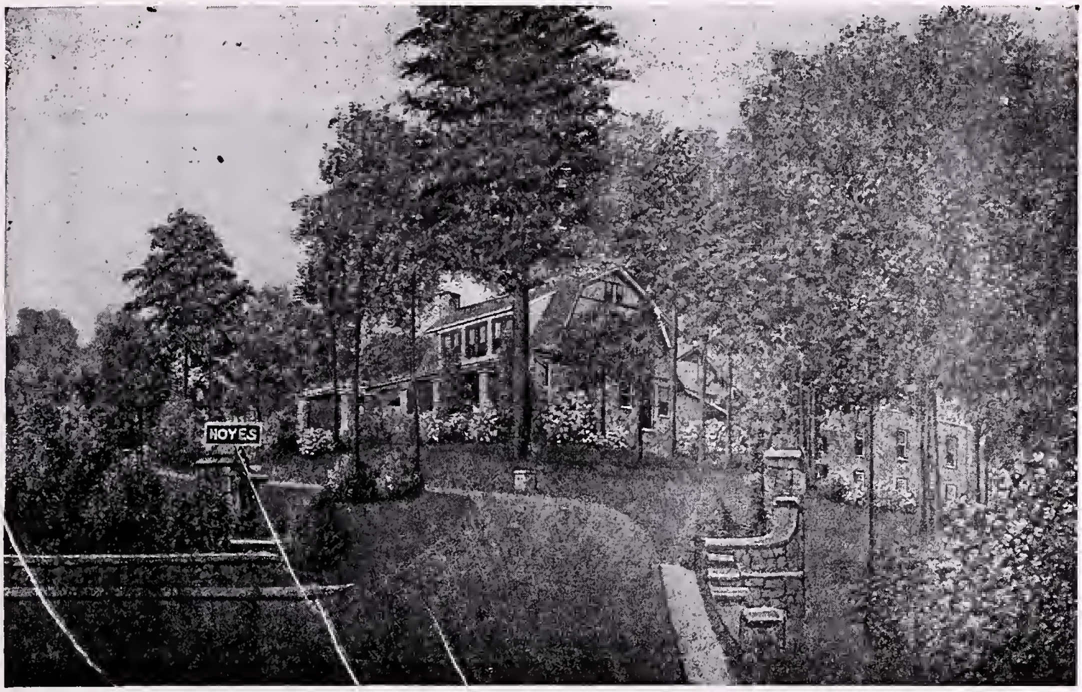

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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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*Lehr, D.: Proc. Soc. Exper. Biol. & Med. 58:11 (Jan.) 1945.
Lehr, D.; Slobody, L., and Greenberg, W.: J. Pediat. 29:275 (Sept.) 1946.

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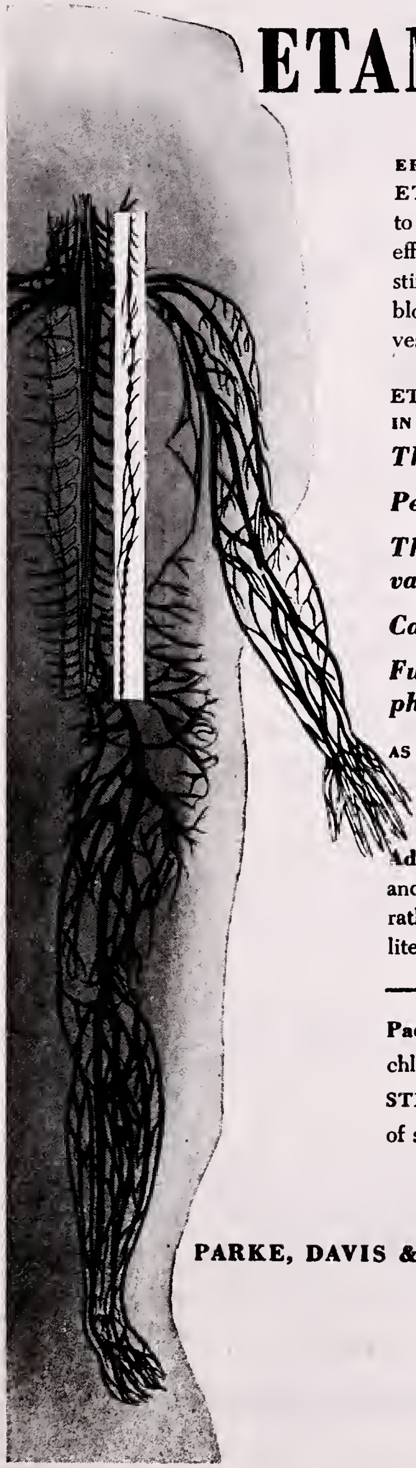

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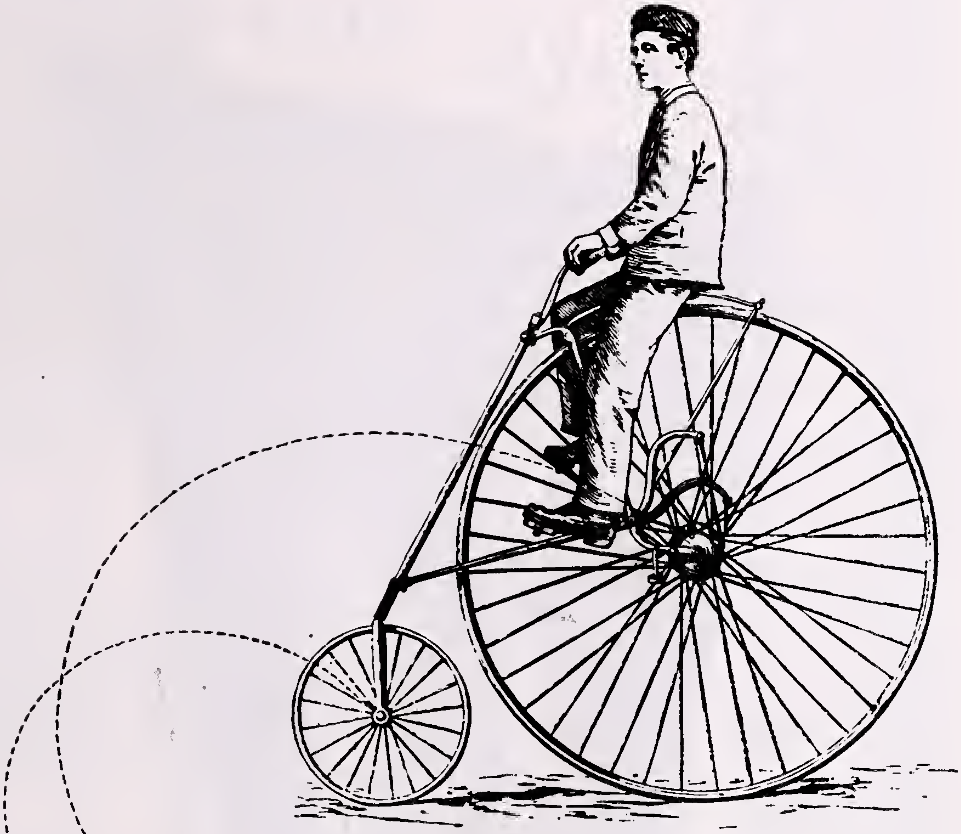

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Charles J. Marshall, New York Journal of Medicine, Vol. 34, Aug. 15, 1934

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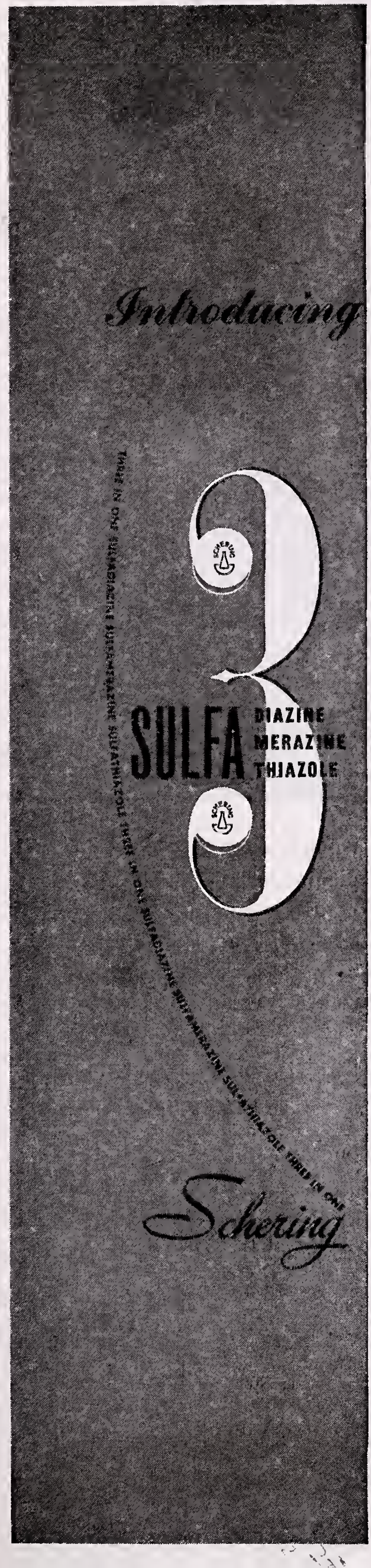
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[1] Lehr, D.: Proc. Soc. Exper. Biol. & Med. 64:393, 1947

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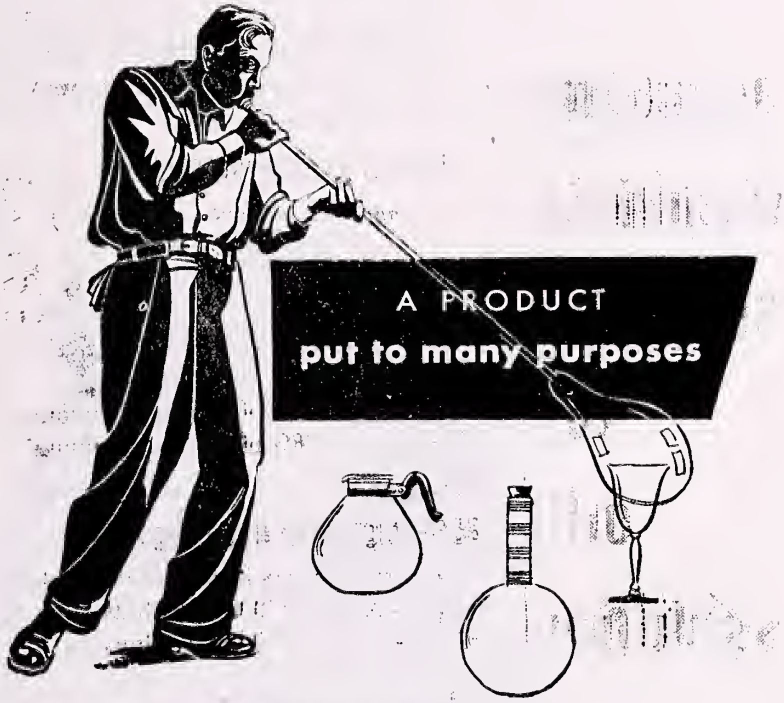

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1. Jl. of Pediatrics: 31:496, 1947.
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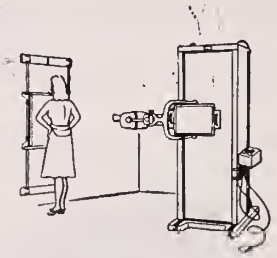

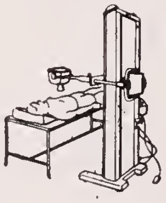

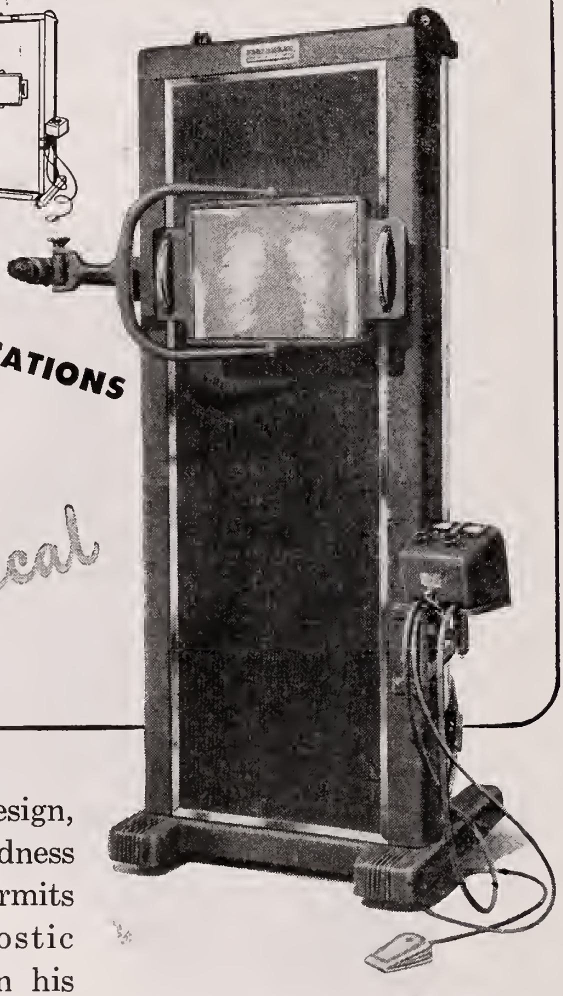

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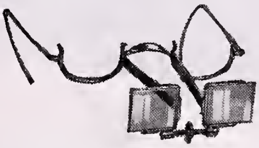

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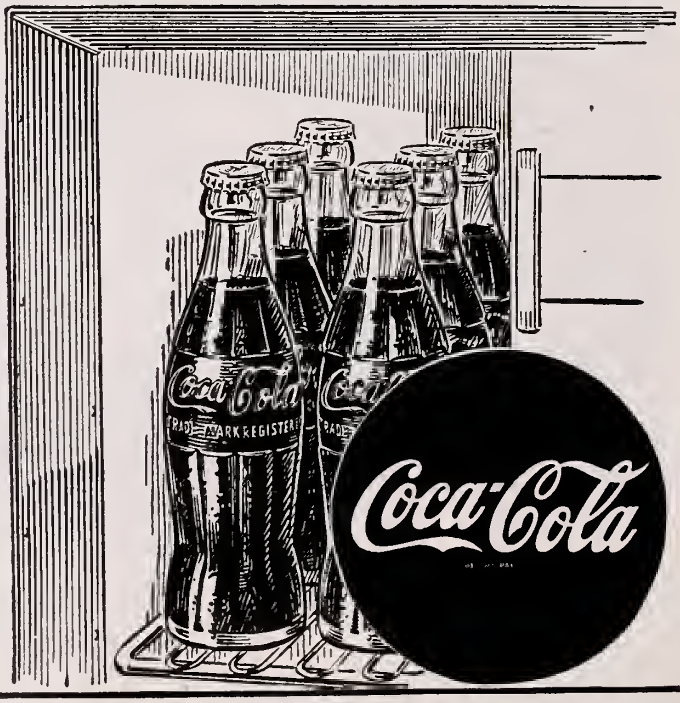
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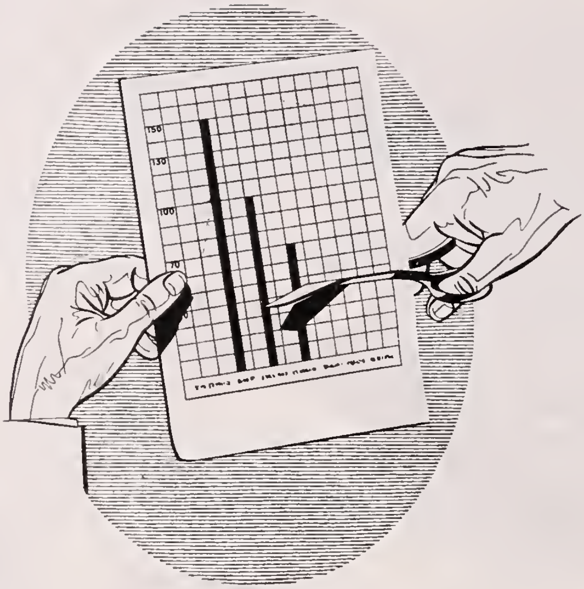
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Trends in the Treatment of Varicose Veins from the Historical and Practical Viewpoints*

FREDERICK L. SMITH, M.D.
Section on Postoperative Care,
Mayo Clinic, Rochester, Minnesota

THE PRE-CHRISTIAN era, with its mythologic pantheology steeped in superstition, and the intermingling of religion with government, restricted progress in the scientific approach to the understanding of the ills with which the ancients were afflicted. Varicose veins, however, must have given sufficient care to the physician of that ancient day to attract the attention of a sculptor to carve in stone a relief depicting, let us presume, a Greek physician lecturing on the subject we are interested in this evening. Nor was this concept of the intermingling of government and religion abandoned in the Christian era, for the seekers of medical information were forced to study human cadavers under an environment of superstition and persecution.

Hippocrates[1] wrote, "When a varix is on the fore part of the leg, and is very superficial, or below the flesh, and the leg is black, and seems to stand in need of having the blood evacuated from it, such swellings are not, by any means to be cut open; for, generally, large ulcers are the consequence of the incisions, owing to the influx from the varix. But the varix itself to be punctured in many places, as circumstances may indicate."

Galen[6] (130-201 A.D.) was more radical in treatment, since he removed the varix by tearing it out with a hook.

Paulus Aegineta[3] (625-690 A.D.) wrote that varices of the leg may be operated on in a manner similar to that employed for varicocele; he thought the therapeutic attempt should be made on those situated on the inner parts of the thighs where they generally arise, for below this, he said, they are divided into many ramifications. He advised that a tourniquet be placed on the thigh and that the patient be asked to walk. Where the vein becomes distended, a mark is made and, with the patient in a reclining position with the leg extended, another tourniquet is applied above the knee. An incision is made through the skin of the distended vein. The vein is freed and tourniquets are removed. A double thread is introduced under the vein cut so as to make two ligatures; then the vein is opened in the middle, between the ligatures, and the blood is evacuated. The upper part of the vessel is tied with one ligature and the lower part is then tied. That part of the vein between the ligatures may be cut out or allowed to drop out with the ligatures. The wound is dressed with a pledget in it and an oblong compress soaked in oil and wine. It is then bandaged. Thus, Paulus Aegineta first described ligation and division of the greater saphenous vein.

During the centuries between the Roman Empire and the Renaissance the doctrines of Hippocrates and Galen prevailed.. Ambroise Paré (1510-1590) described a method similar to that of Paulus Aegineta, but he was, moreover, aware that ulcers of the legs were associated with varicose veins. He also knew that by application of a cautery which would erode the vein, cicatricial healing eventually would ensue.[4]

A leading German surgeon recommended bleeding, a restricted diet and bandages applied to the afflicted legs to strengthen the coats of the veins[5]. Thus we see that up to the middle of the eighteenth century, treatment was mostly surgical in the nature of cutting, burning or the use of escharotic agents. For the next hundred years very little advance was made.

The modern approach to the treatment of varices reveals a distinct trend from surgical to intravenous treatment, as indicated by Pravaz, [5],[2] the inventor of the hypodermic syringe, who advocated the injection of small doses of 2 to 3 minims (0.12 or 0.18 cc.) of a 30 per cent solution of ferric chloride at weekly intervals. This solution was found to be too destructive to the tissues; it resulted in gangrenous sloughing and infection. From 1851 to 1894, investigators of note used various chemicals in varying dilutions, as occasional reports indicated. During this period iodotannic acid was reported by Vallet[6] in 1875. Two hundred patients were treated with this acid without serious complications. In 1877 Schlede[7] proposed surgical treatment consisting of ligation and sectioning of the varicosities at multiple points. He passed ligatures under the veins and tied them over rubber tubing, making as many as thirty ligatures. Results were not successful. English[8] discussed the pathological effect of a 5 per cent solution of alcohol when used as a sclerosing agent, stating that the intima was injured and that formation of thrombi occurred. Madelung[9] in 1884 advocated complete extirpation of the great saphenous vein and ligation of communicating veins through a long incision on the thigh and leg. This procedure, although it was the most favored of all radical ones, was accompanied by a rather high mortality rate and it entailed considerable hospitalization. Trendelenburg[10] in 1890 suggested ligation of the great saphenous vein in the midportion of the thigh. He described the disturbed physiology and also a test to demonstrate this disturbed physiology. This test previously had been described by Brodie[11] forty-five years before.

---

*Read before the Elk Horn County Medical Society, Corinth, Mississippi, May 12, 1947.

The pendulum was swinging back to surgical technic, as in 1900, C. H. Mayo[12] in a paper read before the Minnesota State Medical Association advocated multiple incisions and stripping of the greater saphenous vein. This method was used at the Mayo Clinic for many years. Tavel[13] in 1904 suggested combined ligation and injection of a sclerosing solution, while Keller[14] in 1905 described removal of the greater saphenous vein by stripping technic which he devised. A year later C. H. Mayo designed an instrument for accomplishment of the same result. The year 1911 may be designated as the beginning of a new era in the treatment of varicose veins and ulcers.

From the early twenties, the trend back to some form of surgical treatment, with or without the use of sclerosing solutions, was evident. From 1928 to 1937 the injection method was used at the Mayo Clinic; since 1937 the combined surgical and injection treatment has been employed.

EXAMINATION

During the general examination in the clinical service, patients are sent to the section which is concerned with venous therapy for evaluation of varices of the lower extremities, if such are present. If the patient is nervous or excitable, a sedative agent such as phenobarbital is administered when the patient arrives in the section. The patient, properly prepared, is asked to ascend steps to an examining platform. The patient is examined for any abnormalities such as lipedema, nevi, which suggest the possible existence of arteriovenous fistula or congenital cavernous hemangioma, lymphedema praecox, hernias of muscle sheaths, arterial diseases, erythromelalgia, thrombophlebitis ,thromboangiitis obliterans, dermatitis, ulceration including typical stasis ulcers, malignant and ischemic ulcers, ulcus medicamentosum, ulcerative colitis and ulceration of fungous origin. The method of palpation and percussion, commonly known as the Schwarz test, is performed to determine the patency of the greater saphenous vein. This is accomplished by the physician's placing the fingers of the left hand over the fossa ovalis and the fingers of the right hand over the enlarged vein in the leg of the patient. A wave both ways in the column of blood indicates venous incompetency.

The lesser saphenous vein is examined by placing the patient in the supine position, elevating the limb, collapsing the veins, placing a tourniquet at the groin, grasping the popliteal arch or using a tourniquet at that level and requesting the patient to stand. Hand pressure on the tourniquet is then removed, and if the lesser saphenous vein is incompetent, blood will surge down the vein, after which the tourniquet in the groin is removed. Incompetent perforator vessels are observed when the tourniquets are in place in the groin with the veins collapsed: the patient stands and filling occurs immediately below the tourniquet. When evaluation is completed, the patient returns to the consultant, who notes the findings written in the history and after appraisal of the patient's general examination, refers him back for treatment if the clinical findings warrant.

TREATMENT

Position of the patient for Injection treatment.—The position of the patient for injection treatment should be the same as for examination, so that the patient is in the most convenient position for the physician. The patient is requested to mount the steps and stand on the treatment table, supporting himself by grasping the uprights of a ¾-inch iron pipe frame which extends upward 70 inches, has a width of 25 inches and a crossbar at the top, above the table. The table is 33 inches above the floor. The steps on the table are 10 inches wide, so that the patient has a good tread in descending. Guard rails can be used to assist in descent.

Test dose.—Before the test dose of 0.5 to 1 cc. of sclerosing solution is injected, the patient is asked if previous injections have been carried out and if so, whether any untoward reactions occurred. If reactions did occur, the physician who treated the patient previously is asked by wire for information. If reactions did not occur ,injections are carried out. The ordinary varix is injected by means of a syringe of 2 to 4 cc. capacity and a 26 gauge needle ¾ inch long. This needle is sufficient to enter any superficial incompetent vein. Spider-web types of vessels are injected satisfactorily by filling the syringe a quarter full of the solution of sodium morrhuate, shaking it to produce suds, and injecting the suds. The bubbles pass readily up the plexus in the skin. The needle is removed, the area is massaged, and a sterile pad is applied over the site of the puncture and the area treated.

Allergic reactions to test dose.—These reactions occur within a few minutes to several hours after injection of the initial test dose. Erythema with intense pruritis appears, or possibly large urticarial wheals resembling active exacerbation of hives develop. The subcutaneous injection of 1 cc. of a 1:1,000 dilution of epinephrine usually causes the cutaneous manifestations to subside. Rarely, shock results in which the blood pressure decreases markedly; the patient becomes weak, sweats profusely and requires from a few minutes to three or four hours before recovery occurs. The aforementioned solution of epinephrine can be injected subcutaneously and intravenously and, in case of impending pulmonary edema, the administration of 1/100 grain (0.00065 gm.) of atropine is advisable. Ninety-five per cent oxygen and 5 per cent carbon monoxide and a cardiac stimulant, such as caffeine or sodium benzoate can be administered.

Systemic reactions to test dose.—The patient may feel faint or nauseated. This usually can be controlled by having the patient sit, lower the head, and then raise it against pressure. A whiff of aromatic spirits of ammonia usually suffices to induce deep breathing. On rare occasions, cramps in the back which interfere with repiration because of intercostal spasm frighten the patient and also the physician, if he is not aware of what is happening. The sacrolumbar plexus causes such spastic muscle reactions, if it is stimulated. Assurance to the patient and stroking of the patient's back for a couple of minutes relieve the condition. Vision has been reported to be affected. Hematuria is a rare occurrence.

Hospitalization.—If no allergic reaction occurs, a varicose-vein history sheet is made out and if surgical treatment is required, hospital forms also are made out and taken to the hospital assignment desk. If the patient is to undergo bilateral ligation of the greater or lesser saphenous veins, hospitalization of one night is recommended, during which the patient is exercised at least three to five minutes each hour during the following twelve to eighteen hours.

Ligation.—In the performance of operations, a surgical operating room is best adapted for the purpose. Regional block anesthesia is used as described by Seldon [15] who administers a 5 per cent solution of a local anesthetic agent (metycaine), using about 70 cc. in different areas. A lower abdominal quadrant is infiltrated to block the ileac and lumbar inguinal nerves, and the region of the femoral vessels similarly is infiltrated to block the sensory fibers preparatory to operation. The dose at time of ligation is 3 cc., in each extremity, of a 5 per cent solution of sodium morrhuate.

Injection.—The next day the patient reports to the treatment section. If considerable systemic reaction is manifested by nausea or malaise, nothing is done until the patient feels better. Reaction occurring in the extremity usually is observed to extend from the groin down onto the leg among 65 to 72 per cent of patients. From the lower point of thrombosis, local injection is commenced. An average of 2 to 4 cc. of solution is injected each day. Occasionally injection is carried out in both the morning and afternoon, in which case 2 cc. of solution is injected at each visit. In 1946 the average number of injections per patient was seven. The length of the patient's stay is ten to thirteen days after ligation.

COMPLICATIONS

In the carrying out of subsequent sclerosing treatments, extravascular injections are neutralized by the instillation of isotonic solution of sodium chloride in the area of the spill. With care, extravascular injections should rarely occur, but in spite of good technic, they occasionally happen. Débridement or excision may be required, depending on the extent of damage. Pulmonary embolism occurs rarely; the incidence is about one in every 685 patients treated. One death was recorded among nearly 11,614 patients treated. At the least sign of complications of the upper part of the respiratory system, the patient should be hospitalized and anti-coagulant treatment should be started. Possibly deep venous ligation ought to be carried out, depending on circumstances in the individual case. Radiography does not always reveal the trouble, especially if the infarct is minimal at first. Several days may pass before a roentgenogram of the thorax shows anything; it may disclose nothing at all. To relieve clear-cut involvement, I have placed the patient in the Fowler position, strapped the chest to restrict its movement, and placed the patient in an oxygen tent containing 50 per cent oxygen, especially if the patient is cyanosed. Morphine sulfate is administered to slow respiration, and a sedative agent is administered by rectum to keep the patient in a semicomatose state for several days. These measures insure the patient's quiet and freedom from worry, which are helpful not only to the patient but also to the physician in his management of the patient and his relations with relatives.

CONTRAINDICATIONS TO TREATMENT BY INJECTION AND BY COMBINED LIGATION AND INJECTION

Conditions which, if present, constitute contraindications to the treatment are: 1) any disease associated with a poor prognosis as to life, such as congestive heart failure and coronary sclerosis; 2) uncontrolled diabetes mellitus; 3) blood dyscrasias, except mild types of hypochromic anemia; 4) severe hyperthyroidism; 5) acute infectious diseases; 6) pregnancy, if sclerosing solutions contain quinine in any form; 7) abdominal tumor; 8) occlusive arterial disease in the affected extremity; 9) active cellulitis, lymphangitis, or pyogenic infections of the affected leg; 11) recent thrombophlebitis involving the deep veins of the thigh and veins of the leg; and 11) extreme obesity.

CONCLUSIONS

On the basis of the historical data in this paper, the medical profession has in the past, as in the present, searched for the proper solution in the treatment of venous insufficiency of the lower extremities, as is evidenced by the variations of treatment throughout successive periods. With the same enthusiasm, but with a better understanding, physicians of the future will continue to improve on the results that are obtained at present.

Infantile Pyloric Stenosis*

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THIS CONDITION is four times more common in males than in females and 50 per cent of those affected are first-born children. It is said to be more prevalent in breast-fed babies than in bottle-fed babies and there may be a definite hereditary tendency since it has been observed in twins and in more than one member of the same family. The exact etiology of the condition is unknown. However, two principal views are held to explain its presence.

1. Pyloric hypertrophy, due to spasms.
2. Primary hyperplasia of the muscles.

Various theories have been put forth to explain the spasm, such as incoördination by the sympathetic and parasympathetic nerve fibers supplying this area, hyperacidity hyperesthesia of the mucous membrane, and hyperadrenalism. The pathology is produced by abnormal overgrowth of the circular muscle. The mass is seen and felt as a cartilaginous tumor varying from one to one and one-half inches long. There is no evidence of peritonitis associated. However, occasionally the area occupied by the tumor is somewhat lighter in color than the adjacent stomach wall. Frequently these tumor masses can be felt through the abdominal wall.

When a transverse section is made through the pyloric canal the tumor will be seen to consist of hypertrophied muscle fibers with an increase in the number and size of muscle fibers. The longitudinal muscle is slightly thickened and there is some increase in fibrous tissue. The mucous membrane is tightly pressed into folds in the center of this mass. However, it undergoes little change. When the muscular tumor is divided at operation its folds separate and the mucous membrane will expand to its fullest extent. The stomach may be slightly dilated as a result of obstruction. The tumors end abruptly below where the sphincter bulges to the duodenum, forming a projection similar to that made by the cervix into the vagina. The muscular hypertrophy gradually decreases as it is traced upward along the stomach wall. The duodenum shows no anatomical changes.

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SIGNS AND SYMPTOMS: The child is usually quite healthy and normal at the time of birth. The first symptoms often appear about the third week of life. However, they have been seen to occur within a few days and as late as the sixteenth week. Vomiting, in a large number of cases, is the first and most important symptom. In the early stages it may be slight and follows each feeding. Later the regurgitation becomes very pronounced and there is an accompanying decrease in weight. This is a cause for some anxiety and frequently leads to an alteration in the diet or method of feeding with temporary amelioration. Vomiting, however, may soon return and becomes projectile in nature. Bile is rarely, if ever, found in the vomitus. The child becomes dehydrated and assumes a waxen appearance. In the late stages, the face becomes cadaveric with prominent cheek bones, wrinkles around the eyes and forehead, and a general appearance of a very aged person. Generally speaking, the greater loss of weight, the worse is the prognosis. Constipation is a natural accompaniment of pyloric obstruction. It is present in over 80 per cent of these cases. However, there may occasionally be normal bowel movements or even diarrhea. Alkalosis must be looked for and prevented. In some cases tetany has been observed and occasionally a light type of jaundice.

On examination, distention of epigastrium in contrast to the retraction of the lower half of the abdomen is noted. Visible peristalsis may be seen, particularly after a feeding. They sometimes become vigorous and in a reversed direction from left to right. These children are usually hungry and upon making examination, they should be stripped and disturbed as little as possible. The tumor mass will frequently be felt slightly to the left of the midline and above the umbilicus. Fingers of the left hand should be pressed a little below the right costal margin, and firm steady pressure in a backward, upward and inward direction will usually locate the tumor. It is not always possible to feel a tumor mass, however, when once felt it is unmistakable. This mass may change position at successive examinations. The treatment in these cases which do not respond to medical measures of diet, anti-spasmotic drugs, etc., is generally accepted as a Rammstedt operation, followed by medical treatment. Prior to the advent of the Rammstedt operation, practically every case was treated medically and the mortality rate was quite high. Other complicated and unsatisfactory operations that were performed served only to strengthen the claims of medical treatment. Pylorectomy had a mortality rate of 100 per cent; pyloroplasty 80 per cent; gastro-jejunostomy not less than 50 per cent; Loretta's operation of divulsion of the sphincter was unsatisfactory except in the hand of Burghard. Frededt obtained better results by dividing the muscle but he prolonged, complicated, and rendered the operation more deadly by a transverse suture of the severed muscle of the pyloric canal. Rammstedt, in 1912, in attempting a Frededt operation was unable to complete it owing to the collapse of the patient. The child made a good recovery and contributed a lasting benefit to mankind, since it was realized that simple division of the pyloric tumor, allowing full expansion of the mucous membrane, was all that was necessary. Mortality rate following the Rammstedt operation is not over 5 per cent. Among other factors which lower the death rate has been the general recognition that early operation is the treatment of choice in patients who do not respond satisfactorily to medical treatment. Preparation and postoperative care is very important and the uniform acceptance of the

Rammstedt operation. Technically this operative procedure is not difficult and consists in a simple division longitudinally of the mucous fibers down to the mucosa. A dissector, the handle of a knife, or some other blunt instrument is used to separate the mucous fibers and allow the mucous membrane to bulge through the gap. Sharp pointed hemostats are dangerous in accomplishing this separation since perforations of the duodenum frequently produce bad results. If a perforation is discovered it should be closed immediately by one or two interrupted sutures and reinforced with a tag of omentum. Occasionally it may be necessary to ligate a blood vessel by underrunning with a fine atraumatic needle and ligature. These operations may be done under general or local anesthesia, depending upon the condition of the patient. There are surprisingly few complications following this type of operative procedure and many children have been restored to normal health who were in a dying condition prior to having it performed.

I wish to report two cases, one of which was seen early and the other late following the development of this condition. X-ray films are available on one of these cases.

Case 1:

Male Infant, Age seven weeks.

Had a normal birth and made uneventful progress until the age of four weeks. Was admitted to the hospital on May 12 with a history of projectile vomiting for the past ten days.

PRESENT ILLNESS: At the age of four weeks he began to spit up a portion of each formula. This became progressively worse and resulted in projectile type of vomiting. There has been rapid weight loss during the past five days. He was seen in consultation on May 7, 1947, after having been on medical treatment and having vomited dark brown material, which appeared to be blood during the twenty-four hours preceding consultation.

PHYSICAL EXAMINATION: Physical examination at this time revealed a well developed, dehydrated, white male infant, restless and acutely ill. His rectal temperature was 99 degrees. Respiration somewhat rapid and he was crying at intervals. Palpitation of the abdomen revealed distention of the epigastrium with a palpable tumor mass to the right of the midline and above the umbilicus.

This child was prepared for surgery, and following a clysis of normal saline solution, was operated under drop ether anesthesia.

OPERATION: A typical pyloric tumor was found and a Rammstedt operation was done.

Following this procedure the child made an uneventful recovery and was discharged from the hospital on the twelfth of May in a greatly improved condition. He was seen one week following operating procedure at which time the sutures were removed and his wound was healing nicely. He was again seen two weeks following the operation and has continued to do well up to the present time.

Case 2:

While, Male Infant, Age six weeks.

Was admitted to the hospital on July 14, 1947, with a history of having vomited all of its food since the age of two weeks. This child was treated by a pediatrician in Georgia and seen in consultation by a surgeon who advised operation. However, the operation was refused and the baby was brought to Jackson for further care. He was then treated medically for one week at which time a local pediatrician was called. He recognized immediately the child's condition. Barium meal was given and only a very small portion of the barium passed the pyloris, after a three-hour period.

PHYSICAL EXAMINATION: Revealed a critically ill child who was markedly dehydrated, pale and weak. His rectal temperature on admission was 100 degrees. The abdomen showed some distention of the epigastrium and a questionable tumor mass was felt in the upper right quadrant. He was given a lysis of 100 cc. of whole blood and after saline, and was operated under local anesthesia. The child almost died on the operating table.

Immediately following this procedure, he was given 75 cc's of whole blood and afted six hours began taking sterile water. He was gradually returned to a formula and steadily improved. Because of high fever he was placed on penicillin therapy.

On July 18, 1947, the child was discharged from the hospital and has continued to improve up to the present time.

Both of these cases showed a moderate degree of anemia and a slight leucocytosis, which cleared up quickly following operation and adequate **nutrition.**

Although roentgenograms play an all-important role in objectively discovering and delineating tuberculosis lesions, they will never be accurate enough to supplant sound medical judgment. —R. V. Platou, M.D.

Streptomycin in the Treatment of Pertussis Pneumonia*

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and
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PERTUSSIS is one of the outstanding causes of morbidity and death in infancy and early childhood. Dauer's[1] statistics show that pertussis accounts for about 5 per cent of the infant mortality rate in New York state and about 2.3 per cent in the entire United States. Fox[2] reviewed 362 hospital admissions for pertussis from January 1, 1933, to June 30, 1943, and found the overall mortality to be 8.6 per cent. Of 118 of these pertussis cases under one year of age, the motality rate was 19.4 per cent.

Pneumonia is by far the most common complication and is usually found in those cases which die of pertussis. It is seen in the form of scattered areas of consolidation and atelectasis, peri-bronchial infiltration with involvement of adjacent alveoli, and interstitial thickening of the alveolar walls.[3]

Kohn[4] studied roentgenograms of the chest taken on 222 cases of pertussis, and observed that there was often no clinical evidence or physical sign corresponding to the changes noted on x-rays. He found consolidation most frequently at the base, in the right cardiophrenic angle, and also at the hilus. Pneumonic consolidation was demonstrated in 22.4 per cent of a group of 154 cases without fever, 73.3 per cent of 15 children with low-grade fever, and 81.1 per cent with high fever (over 101° F.).

In 1940, Kohn[5] reported thirty-three cases of pneumonia during pertussis treated with sulfapyridine. Cultures obtained from the pharynx, larynx, pleural exudate, and postmortem lung tissue most frequently showed Streptococcus hemolyticus, Staphylococcus aureus, and a Pneumonococcus. Hemophilus in-influenzae and Hemophilus pertussis were occasionally found. One case that came to autopsy yielded Hemophilus pertussis in pure culture from the lung tissue. The observation made was that sulfapyridine is of questionable value in pneumonia during pertussis, the results being no better than when supportive measures alone are used. Similar therapeutic results were obtained regardless of what bacteria were cultured from the respiratory tract. The pathology of pneumonia during pertussis differs from ordinary pneumonia of childhood, and a possible explanation of the ineffectiveness of sulfapyridine is that Hemophilus pertussis, possibly with secondary invaders, forms the pertussis pneumonia complex rather than a pneumococcus.

In a discussion on streptomycin in pediatrics, Alexander[6] stated that the results of in vitro sensitivity tests provide an index of the therapeutic effectiveness of streptomycin in H. influenza meningitis. The same in vitro tests showed that the range of sensitivity of Hemophilus pertussis was not significantly increased over H. influenzae. It was stated that there is reason to believe that streptomycin will prove to be an effective agent against Hemophilus pertussis infections, but that clinical trial is inadequate for evaluation.

Hegarty[7], using mice protection tests in which mice were inoculated with Hemophilus pertussis, then treated with streptomycin, found that 50 per cent were protected. Those that died lived an average of twenty-two days, whereas the untreated controls died in an average of five and one-half days. Clinical investigation of the use of streptomycin against Hemophilus pertussis was suggested.

Bradford[8] also found that streptomycin exerts a protective therapeutic effect on the course of experimental murine pertussis, as indicated by a significant reduction in mortality rate and the disappearance of organisms from the lungs of surviving mice. Penicillin in the same type of protective tests was ineffective.

We feel that in our cases here presented, streptomycin was of definite value in the treatment of pneumonia occurring during pertussis.

Case 1. A three-year-old white female with residual poliomyelitis involving the lower extremities was transferred from the orthopedic service on 2/16/47 with the diagnosis of pertussis. She had had catarrhal respiratory symptoms with cough fourteen days, and was transferred when whooping cough paroxysms

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CASE SUMMARIES

appeared. She was afebrile and showed a total white blood cell count of 50,000/cu. mm. with 29 neutrophiles, 69 lymphocytes, and 2 monocytes on differential.

On 2/20/47, her temperature rose to 104° F., and scattered rales were heard over the chest. X-ray showed patchy density in the right cardiophrenic angle and left base. Penicillin was started, but brought no clinical improvement, so on 2/22/47, it was discontinued and streptomycin begun in a dosage of 200 mg. intramuscularly every three hours for two doses, then 100 mg. every three hours. There was rapid clinical improvement (see Fig. 1). Rales were no longer heard, coughing paroxysms ceased in four days, and x-rays gradually cleared. One transfusion of 250 cc. of whole blood was given.

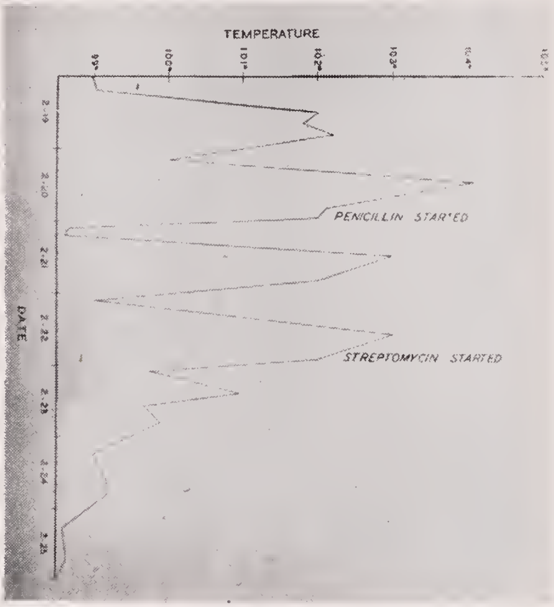


FIGURE 1.

Case 2. A seven-week-old male was admitted on 2/11/47 with a history of a cough which began four weeks previously, and which for about two weeks had been paroxysmal, ending with vomiting. Thirty-six hours before admission, fever, dyspnea, cynosis, and anoxia appeared.

Temperature was 101.4° F. The infant appeared acutely ill, cyanotic, moderately dehydrated, and dyspneic. There was decreased resonance and suppression of breath sounds over the right lung. Roentgenograms showed an hemogenous density in this area.

Hemogram showed hemoglobin of 9 grams, total red cell count of 2.64 million, total white cell count of 24,200 with neutrophilic segmented cells 1 per cent, "stabs" 43 per cent, juveniles 10 per cent, and lymphocytes 46 per cent.

Oxygen was administered and a transfusion of 100 cc. of whole blood given. Streptomycin, 125 mg. every three hours intramuscularly, was begun. There was rapid clinical response. On 2/15/47 there were crepitant rales audible over the right lung field, indicating resolution, and on 2/19/47, the chest was clear to auscultation and percussion. Coughing had ceased. Roentgenograms were almost completely cleared by 2/28/47.

Case 3. A six-month-old colored female was admitted on 4/16/47 with pertussis. No history was obtainable because her parents deserted her in the admitting room.

Temperature on admission was 102.2° F. and she was having typical whooping cough paroxysms. She had a left suppurative otitis media which was drained by myringotomy. There were no other positive physical findings other than a few coarse bronchial rales. The total white blood cell count was 48,000 with 41 per cent neutrophiles, 51 per cent lymphocytes, 6 per cent monocytes, and 2 per cent eosinophiles. X-ray of the chest on 4/17/47 showed patchy areas of increased density throughout both lung fields.

Streptomycin was begun in a dosage of 100 mg. every three hours, given intramuscularly. Temperature declined and pulmonary infiltrations resolved. Coughing persisted, however, for about two weeks after admission.

Case 4. A six-year-old colored male was admitted on 4/13/47 with a history of cough for three weeks. Whooping cough paroxysms, terminating in vomiting, had been present for about one week. Fever was noted one day before admission.

Temperature was 102.4° F. Crepitant rales were heard over the left lower lung field and there was catarrhal otitis media bilaterally. Total white blood cell count was 19,700 with 46 per cent neutrophiles and 54 per cent lymphocytes.

Penicillin was begun in dosage of 30,000 units every three hours intramuscularly but this did not improve the clinical picture. On 4/15/47 x-ray showed a patchy increased density in the left mid-lung field radiating from the hilar region. (See Fig. 2.)

On 4/16/47 penicillin was discontinued and streptomycin begun, with 200 mg. being administered by intramuscular route every three

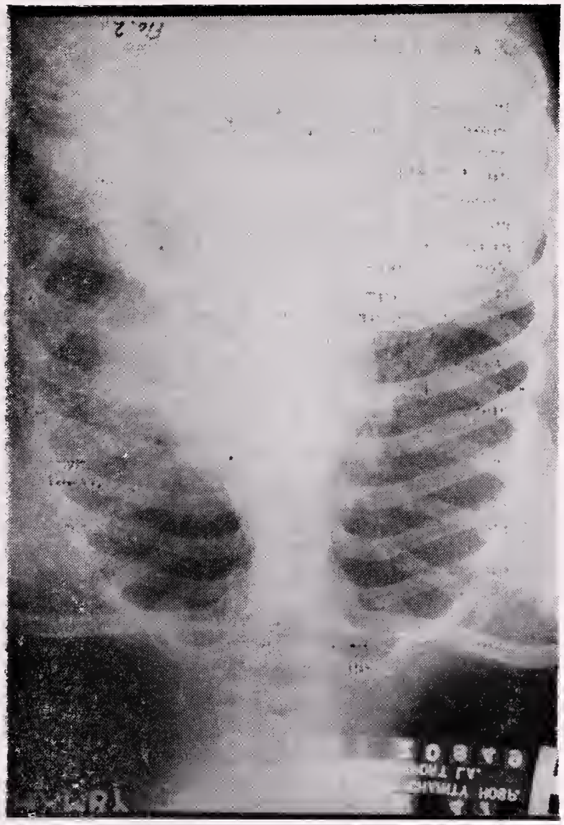


FIGURE 2.

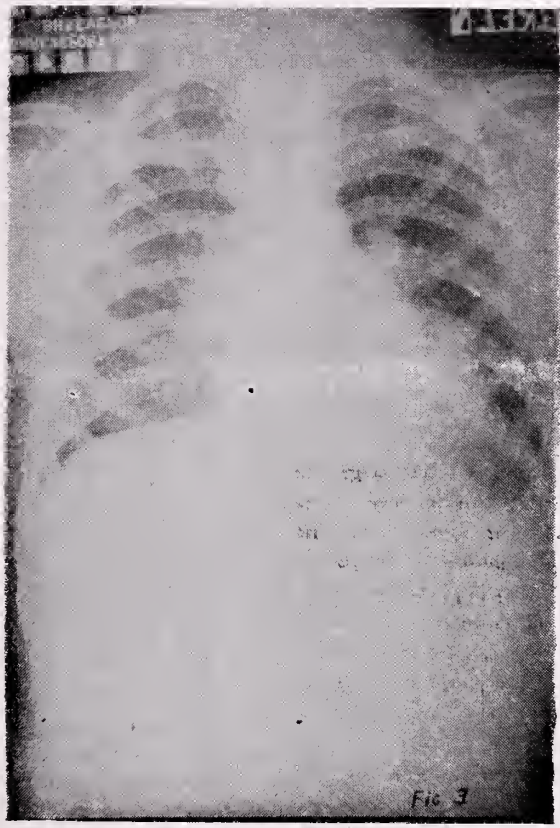
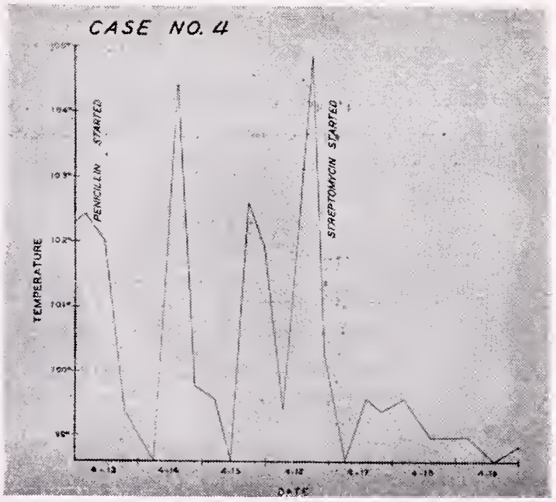


FIGURE 3.



hours. There was immediate clinical improvement. (See Fig. 4.) Within a week the lungs were clear to percussion and auscultation, and there was definite improvement in the roentgenogram. (See Fig. 3.)

Two of our cases of pertussis pneumonitis expired. They were premature twins, seven weeks of age, who were admitted with pertussis pneumonia after three weeks of cough and fever. One had a strangulated inguinal hernia which required surgery soon after admission. Their total leucocyte counts were 52,000 and 73,000 respectively, with relative and absolute lymphocytosis, and both showed pulmonary infiltration on x-ray examination. The twin requiring the hernioplasty showed a favorable initial clinical response to streptomycin, with the temperature dropping rapidly from 104.6° to normal. However, on the sixth hospital day, the temperature rose and a nystagmus was noted. Spinal fluid was bloody and xanthochromic. The coughing persisted and the patient expired on the next day. Autopsy revealed hemorrhage from the left choroid plexus. The other twin followed a similar clinical course, but coughing persisted, and he expired from asphyxia following aspiration of vomitus during a paroxysm.

SUMMARY AND CONCLUSIONS

Failure to respond to penicillin in Cases 1 and 4 tends to preclude pneumococci and other susceptical cocci as the cause of the disease. The clinical response in our cases when penicillin was discontinued and streptomycin begun suggests that streptomycin effectiveness in the clinical therapy of Hemophilus pertussis infections parallels its effectiveness against the organism in vitro and in experimental infection.

Further clinical investigation on larger series of cases is recommended before conclusions are drawn.

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(It is regretted that an error in composition permitted the separation of the following references from the first essay, by Dr. Frederick L. Smith, pp. 289-292.)

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Think of the benefit from a campaign to stop the spray of infected mouth and nose droplets! Not only would the spread of the disease be slowed but the seasonal surge of disease like the common cold, influenza, measles, whooping cough and pneumonia would diminish. It would be possible to go to a movie without having a germ-laden spray hurled at one from behind and consequently having to suffer from the other fellow's respiratory infection. UnUder these conditions, dodging the tubercle bacillus, in and out of the hospital, would be possible for al of us. —Ezra Bridge, M.D.

Apparent Transection of Spinal Cord*

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THE FOLLOWING three cases were treated at Mercy Hospital-Street Memorial within a period of two weeks. All three presented clinical evidence of spinal cord injury and serve to exemplify the difficulty encountered in early diagnosis of spinal cord trauma.

FIRST CASE: Twenty-five-year-old white male, admitted by ambulance October 1, 1946, one hour after fourteen-foot fall onto his back. The patient had experienced pain in the low back and immediate numbness and weakness of the lower extremities following the fall. He had been unable to arise unassisted. On admission he was in severe pain but not shocked. The pain was across the lower back and deep in the abdomen. There had been no loss of sphincter control and although the patient had a sensation of paralysis in his lower extremities he stated this was just "numbness," not "a dead feeling."

Examination revealed diffuse tenderness over the lumbosacral area without palpable deformity. Abdomen negative. Reflexes intact. Sensation diminished. Although he was able to dorsiflex and extend the feet, he stated he was unable to support the extremities. Quadriceps and hamstring tone present. X-rays negative.

Obviously this was a case of "spinal shock." Whether or not actual pathology is present in these cases is difficult to say. Occasionally individuals fail to improve and these are most likely to be examples of hysterical paralysis. Rarely failure to recover is due to a dislocation with actual cord damage, which dislocation has been unknowingly reduced before the time of the x-ray. For this reason prognosis must be deferred until the clinical course has confirmed one's early diagnosis. The only safe treatment is absolute bed rest on a firm support with careful observation until complete recovery has occurred. The above patient was perfectly well in twenty-four hours.

SECOND CASE: Forty-year-old white male, admitted September 20, 1946, by ambulance. The patient was conscious but dazed. He stated that his car had turned over and that he did not know the exact mechanism of his injury. He had been unable to move his lower extremities and had lost sensation below the level of his waist since the accident.

Examination failed to demonstrate reflexes, muscle function, or sensation below the level of the waist. Sphincter control had not been lost. There was no obvious deformity of the spine but pain in the dorsal region above the level of anesthesia. A diagnosis of transection of cord was made and the patient placed on a Foster type of frame in moderate hyperextension. Eight hours later sensation, reflexes and muscle function had returned to the lower extremities. The patient felt that his legs were still weak although accurate testing was difficult because of pain in the low dorsal region on resisted motions. X-rays showed only mild compression fracture of the eight dorsal vertebrae. Full strength returned within three days and the patient was allowed up in five days in a hyperextension body jacket. Discharged with diagnosis of compression fracture and transient spinal shock.

THIRD CASE: Seventy-two-year-old white male admitted by ambulance September 13, 1946, four and a half hours following a fall in the barn. The patient had slipped and plunged ten feet head first into a manger, forcibly flexing his head and neck on his chest. Although in acute distress with pain in the neck and shoulders he seemed mentally clear and described definitely experienced immediate and complete paralysis below the shoulders at the time of the impact of the fall. On repeated questioning the patient denied any sensation or ability to move below his shoulders following the injury.

Examination revealed loss of sphincters, complete loss of reflexes, sensation, and all muscle function below the level of the shoulders. Both forearms were completely paralyzed but biceps and deltoid function was present. There was swelling and obvious deformity of the neck. With the head steadied in slight extension and traction, x-ray revealed complete anterior displacement of the first five cervical vertebrae on C6.

Because of the history, physical findings, and x-ray, a diagnosis was made of fracture-dislocation of C5 on 6 with complete transection of the cord. In spite of the dismal outlook with this diagnosis, skeletal traction was applied in the form of skull tongs and thirty pounds direct pull placed on the head with the line of force directed for thirty degrees of flexion.

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*From the Street Clinic, Vicksburg, Miss.

Twelve hours later there had been a return of sensation in the right lower extremity with ability to move the toes and foot. The patient could discern stimuli to some extent in the left lower extremity and there was some return of power in shoulder rotators. Check x-ray showed complete reduction of the fracture dislocation. Spine was gradually extended and traction decreased over the next three and a half weeks and the patient nursed on a Foster frame by turning him yet maintaining traction through the axis of rotation. There has been practically complete return of sensation to both extremities and approximately forty per cent return of motor function. The patient is now able to turn himself somewhat in a flat bed wearing only a Thomas collar.

COMMENT

The above three records point out the fallacy of depending on early physical findings to diagnose and prognose apparent spinal cord injury. The history is likewise misleading. Histories are notoriously undependable. They proved to be so in two of the above cases. further questioning, not of the patient but of the state trouper who saw the second patient at the scene of the accident, revealed that he had not had immediate or complete paralysis by any means. Actually he had climbed out of his car, walked around a little and sat down on the running board before he began feeling weak and numb in his lower extremities. By the time of admission, however, the patient had completely forgotten this part of the episode.

The history as given by the third patient also proved to be false. Conversation with his local physician revealed that as long as thirty minutes following his injury the patient was still able to move his right leg and arm. Interestingly enough, the patient appreciated the gravity of his injury and demanded that his will be taken down before he was moved to the hospital. Details of the exact technique by which this big man was transported are not available, but it is known that he had no voluntary control over the positioning of his head while he was carried about fifty feet in the arms of two friends.

SUMMARY

The chief purpose in presenting these cases is to point out the importance of assuming, regardless of history, physical findings, or even x-ray, that whatever cord injury seems evident may still be reversible. Even the most obvious case of complete transection of the cord should unquestionably be treated expectantly and with utmost respect for any further danger of cord damage. Who can say how much cord damage is done at the time of the injury and how might be added by indiscreet handling of the patient?

POSTGRADUATE COURSE IN ELECTROCARDIOGRAPHY

Emory University School of Medicine announces a five-day intensive course presenting a comprehensive survey of electrocardiography.

Emphasis will be placed on the clinical interpretation of the electrocardiogram in the light of modern excitation theories and the newer techniques in electrocardiography. The uses and interpretation of multiple chest leads, unipolar leads, the entricular gradient and variation in normal patterns will be stressed.

Registration Fee—$40.00
Make application to:
Director, Postgraduate Education
Emory University School of Medicine
36 Butler St., S.E.; Atlanta 3, Ga.

AMERICAN ACADEMY OF PEDIATRICS

The area meeting of the American Academy of Pediatrics will be held at the Olympic Hotel, Seattle, Washington, September 13-15, 1948.

Members of state medical societies are welcome to attend. The registration fee will be $5.00 for such non-members together with a $5.00 registration for which each registrant receives a ticket to the banquet, making a total registration fee of $10.00.

Registration may be made ahead of time by writing to Dr. C. G. Grulee, Sec'y-Treas., American Academy of Pediatrics, 636 Church Street, Evanston, Illinois.

The Mississippi Doctor

Published monthly at Booneville, Mississippi.
Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription $1.00.

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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MILDRED P. ANDERSON.........Assistant Editor

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Memphis, Tenn.

Address all material for publication to W. H Anderson, M.D., Booneville, Mississippi.

Editorials

Three very familiar faces are absent at our meeting, Dr. John Darrington, Dr. A. F. Cooper and Dr. J. C. Pennington. The warm heart, the brilliant intellect, and the radiant personality of Dr. John Darrington made every one rejoice in his presence. In the technique of handling a medical meeting Dr. A. F. Cooper had no superior. A great diplomat, he possessed a fine sense of humor. He served the Mid-South well as secretary for about twenty-five years. Dr. J. C. Pennington, who was to have presided at this meeting, was a most lovable man. He loved the Mid-South and was always o nhand for the meetings, continually zealous in doing good deeds for others.

You will note the advertisement of the J. A. Majors Company of New Orleans and Dallas in this issue of the Journal. This company handles the W. B. Saunders Company books, but will secure any book for you. Dr. Majors, a native of Mississippi, knows his books and the doctors over the nation, and is one of the cleverest men we have ever known. His fine son is beginning to take over, with the other esteemed associates. The Majors Company will serve you well. We appreciate their coöperation.

The appropriation for our four-year medical school will be up before our legislature at an early date. It should pass without opposition. Our nation is short of doctors about twenty per cent and it will take about this many years to meet the demand. We must either increase the capacity of our medical schools now or build others. Our state has many fine young men who need to study medicine, whom we could train to take care of our own state and have a number to spare every year to go out and practice democratic medicine and bless the world. We have a good two-year school, now forty-four years in operation. We must advance to the four-year school. With a central teaching hospital connected with our medical school, and the fine system of hospitals we plan to have over the state affiliated with it, we can educate the finest type of doctors and nurses to be found in this nation. We think a scholarship should be furnished to each county when we have a four-year school as a good plan for distribution. Some of the big medical schools we have now must in the future become mainly post-graduate schools to take care of our doctors and the ones who will now want to come from other countries for graduate work. We must be big enough to furnish these advantages in the interest of better international medical service and for the promotion of a world brotherhood.

The ceremonies in Houston and Amory honoring Drs. J. Rice Williams and G. S. Bryan as members of the Fifty-Year Club were very fine indeed. They were well attended and feighted with expressions of praise and gratitude for their long and noble services. Service is the devine measure of success. Our noble band of men who have served for a half century or more are so well typefied by the two men we have just honored with a certificate and a pin. Across the half century they have done a noble part in adding to the volume of life, the length of years, and the fine quality of citizenship in their respective communities. These memorial services for the living are very appropriate for these men and especially so for the ones who remained at their post of duty during the doctor shortage for the last eight or ten years.

We seek to honor similarly every doctor in our state eligible for membership and deliver his certificate for distinguished service over a fifty-year period.

MID-SOUTH PAST PRESIDENTS

PAST-PRESIDENTS' BANQUET IN 1942, WITH DR. C. M. SPECK HOST

Left to right, back row: Drs. L. H McDaniel, Tyronza, Ark.; C. R. Arnold, Jackson, Tenn.; E. R. McLean, Cleveland, Miss.; Nick Walker, Dyersburg, Tenn.; H. King Wade, Hot Springs, Ark.; C. H. Lutterloh, Hot Springs, Ark.; W. H. Anderson, Booneville, Miss.; V. B. Philpot, Holly Springs, Miss.; F. L. Husbands, Blytheville, Ark.; G. S. Bryan, Amory, Miss., guest; P. W. Rowland, University, Miss.; C. M. Speck, New Albany, Miss.; A. G. Hudson, Memphis, Tenn.; A. C. Cox, Helena, Ark. Since this meeting Drs. Arnold, Rowland and Speck have passed to their reward.

PAST-PRESIDENTS' BANQUET IN 1947, DR. C. H. LUTTERLOH HOST

On Wednesday evening at the Peabody Hotel, February 12, 1947, Dr. Charles H. Lutterloh, president of the Mid-South Postgraduate Medical Assembly, had as his guests, members of the Past-Presidents' Club at a fine banquet. Dr. Lutterloh is especially endowed with the qualities that men love in a host. The club gave him a vote of thanks and appreciation.

Dr. W. H. Anderson, secretary, reported the death of five past-presidents since the last meeting of the club five years ago, these as follows: Dr. B. C. Arnold, Jackson, Tennessee; Dr. J. B. McElroy, Memphis, Tenn.; Dr. Peter W. Rowland, Oxford, Mississippi; Dr. Ephraim Rankin McLean, Cleveland Mississippi; Dr. Clyde Speck, New Albany, Mississippi.

The following members of the club were present: Dr. C. H. Lutterloh, presiden Dr. P. W Lutterloh, F. L. Husbands, V. B. Philpot, C. M. Harwell, J. C. Pennington, president-elect, A. F. Cooper, honorary member, J. L. Dunavant, H. King Wade, L. H. Daniel, Jere Crook, Carl R. Cruthcfield, W. H. Anderson, A. G. Hudson, Nick Walker, and John Darrington.

Dr. Cooper served as an honorary member of the club from its beginning because of his very faithful service for more than twenty years as secretary of the Mid-South Postgraduate Medical Assembly.

SOUTHEASTERN SURGICAL CONGRESS

The sixteenth annual assembly of the Southeastern Surgical Congress will be held in Hollywood, Florida, Hollywood Beach Hotel, April 5, 6, 7, 8, 1948. The following surgeons will appear on the program:

Dr. Herbert Acuff, Knoxville, Tenn., title to be announced.

Dr. Harry Bacon, Philadelphia, Pa., "Surgical Management of Cancer of the Lower Bowel without Colostomy."

Dr. Frederick Boyce, New Orleans, La., "Human Bites."

Dr. Lester A. Brown, Atlanta, Ga., title to be announced.

Dr. A. F. Burnside, Columbia, S.C., title to be announced.

Dr. George Curtis, Cleveland, Ohio, "The Surgery of the Spleen."

Dr. M. Y. Dabney, Birmingham, Ala., title to be announced.

Dr. J. W. Devine, Jr., Lynchburg, Va., title to be announced .

Dr. L. W. Dowlen, Miami, Fla., title to be announced.

Dr. Gilbert Fisher, Birmingham, Ala., "The Conservative and Surgical Management of Esophageal Obstruction."

Dr. L. J. Gariepy, Detroit, Mich., "Carcinoma of the Gallbladder."

Dr. Arnold Griswold, Louisville, Ky., "The Treatment of Peptic Ulcer by Resection of the Vagus Nerves."

Dr. William G. Hamm, Atlanta, Ga., "Plastic Repair of Injuries of the Male Genitalia."

Dr. Claude J. Hunt, Kansas City, Mo., "Surgical Treatment of Malignant Lesions of the Colon Complicated by Inflammatory Reaction, Fixation or Obstruction."

Dr. Rudolph Jaeger, Philadelphia, Pa., "Intracranial Aneurysms; Surgical Treatment."

Dr. Frank A. Johns, Richmond, Va., "Cancer of the Colon."

Dr. J. Harvey Johnson, Jr., Jackson, Miss., "Acute Cholecystitis."

Dr. Willoughby Kittredge, New Orleans, La., "Subcapsular Nephrectomy: Its Indications and Advantages."

Dr. Herman Kretschmer, Chicago, Ill., "Some Problems Associated with Surgery of Kidney Stones."

Dr. Ira Lockwood, Kansas City, Mo., "Non Obstructive Lesions of the Colon."

Dr. J. G. Lyerly, Jacksonville, Fla., title to be announced.

Dr. Robert Major, Augusta, Ga., "Transthoracic Approach to lesions of the Esophagus and Upper Abdomen."

Dr. Samuel F. Marshall, Boston, Mass., "Tumors of the Neck."

Dr. George H. Martin, Vicksburg, Miss., "Congenital Anomalies of the Gastro-Intestinal Tract in Infants and Children."

Dr. Charles Mayo, Rochester, Minn., "Surgical Procedures for Carcinoma of the Lower Colon and Rectum."

Dr. Julian A. Moore, Asheville, N.C., "The Management of Hemothorax."

Dr. Carl Moyer, Dallas, Texas, "Alterations in Renal Function of Man Incident to Operative Trauma and Anesthesia."

Dr. Martin Nordland, Minneapolis, Minn., "Fundamental Principles in Throidectomy."

Dr. L. M. Orr, Orlando, Fla., title to be announced.

Dr. E. G. Ramsdell, White Plains, N.Y., "Carcinoma of the Breast, A Comparative Statistical Study."

Dr. Fred Rankin, Lexington, Ky., "The Surgical Treatment of Polyposis."

Dr. Henry K. Ransom, Ann Arbor, Mich., "Experiences with Total Gastrectomy."

Dr. James F. Robertson, Wilmington, N.C., title to be announced.

Dr. R. A. Ross, Durham, N.C., "The Treatment of Female Genital Malignancy."

Dr. R. L. Sanders, Memphis, Tenn., title to be announced.

Dr. William L. Sibley, Roanoke, Va., "Lead Poisoning in Infancy, a Case upon whom two Unnecessary Operations Were Performed."

Dr. Dargan Smith, Owensboro, Ky., "Glycerin Osmotic Drainage in Peritonitis."

Dr. Ambrose Storck, New Orleans, La., title to be announced.

Dr. Walter Stuck, San Antonio, Texas, "Complications of Fractures of the Shaft of the Femur."

Dr. H. G. Smithy, Charleston, S.C., "An Approach to the Surgical Treatment of Chronic Valvular Disease of the Heart."

Dr. Charles C. Trabue, Nashville, Tenn., "Plastic Procedures for the General Surgeon."

Dr. Joseph Webb, Huntington, W. Va., "Needle Biopsy of the Liver in Diagnosis of 'Surgical' Jaundice."

Dr. R. S. Widmeyer, Parkersburg, W. Va., "Child and Infancy Surgery."

Dr. David A. Wilson, Greenville, S.C.,"The Treatment of Bilateral Apical Pulmonary Tuberculosis."

Dr. John M. Wilson, Mobile, Ala., "Management of intestinal Obstrcction."

DOCTORS HONORED

PUBLIC RECOGNITION COMMEMORATES HALF CENTURY OF SERVICE

DR. BRYAN

DR. WILLIAMS

(Appreciation expressed by Dr. W. H Anderson, Booneville, Miss., in behalf of the State Medical Association, at the public recognition of Dr. G. S. Bryan's fifty years of medical service, February 1, 1948, Amory, Miss.)

DR. G. S BRYAN

Amory and the good people of the city are to be congratulated on coming here to pay this tribute to Dr. G. S. Bryan who has served long and well as a citizen and as a physician. Recognitions from his pastor, Rev. John Measells, the mayor, the superintendent of the schools and a fellow physician, Dr. M. Q. Ewing, have been deserved and fittingly phrased. Yet our subject, with his life of service, may well furnish material for much longer discourses. His activity as a citizen, his interest in education, his devotion to his church and his ability as a practitioner of medicine, his great work as a leader in organized medicine, portray Dr. Bryan as a leader, crusader and builder. "A quitter never wins, and a winner never quits." He keeps on keeping on. "The world loves a lover." Your presence here evidences your love for a great servant.

Dr. Bryan has the inherent qualities of mind, heart, and soul to have made him a success in any field he might have chosen. He was one of the first in this section of the state to invade the human abdomen successfully. Tenderly he has dressed many wounds while the Lord healed them He has applied life-saving remedies, while giving advice that added to the volume of life the length of years, and to the useful citizenship of the patient. He has been the type of builder that gives power to our country in time of great crises. He possesses medical integrity, refusing to make money his god. Service has been his watchword. In organized medicine in Mississippi he has been the "sage of Monticello." He has been a progressive optimist in civil life as well as medicine. He has worn the armor of righteousness. His knowledge and his wisdom are unmeasured. He has held many honors professionally and otherwise, and he has honored each one of them.

In a large measure we give Dr. Bryan the credit for discovering another native son, Dr. Felix J. Underwood, favorably known nationally and internationally.

It is a great pleasure and distinct honor, Dr. Bryan, to deliver to you this certificate of honor won by many years of service and to pin this button upon your coatt. The Guide Book of Life teaches us that greatness is measured by service. Surely your bank account in the life to come will be more than you can ever spend. We are grateful that we have had the opportunity to drink of your fountain of knowledge and wisdom.

(Tribute given by Dr. W. H. Anderson, Booneville, Miss., representing the State Medical Association on the occasion of Dr. Williams' formal admission to the Fifty-Year Club, Jan. 25, 1948, Houston, Miss.)

J. RICE WILLIAMS, M.D.

Joshua Rice Williams was born at Redland in Pontotoc County, Mississippi, on August 3, 1867. His initial schooling was in the schools of the county, and later at Houlka. From there he went to the University of Tennessee Medical School, where he received his M.D. degree on March 22, 1894. He was president of his graduating class, and served as a member of the judiciary committee of the Paul F. Eve Medical Society of the University. Postgraduate work at the old University of Nashville earned for him a diploma from that institution on March 24, 1896.

Dr. Williams entered the practice of medicine at Houlka, Mississippi, in 1894, remaining there for four years. In 1899 he moved to Van Vleet and practiced there until 1904.

On January 20, 1904, Dr. Williams opened his practice in Houston and has continued in it until the present. The Houston Hospital, with which he became associated in 1923, was the scene of his first hospital work, and there he was instrumental in installing the best x-ray apparatus available at the time. Preparatory to using this equipment for radiography and deep therapy, he studied in Memphis, St. Louis, Chicago, New Orleans, Battle Creek, and the Mayo Clinic in Rochester ,Minnesota.

Dr. Williams has kept up active affiliation with professional groups such as the Radiological Society of North America; the Mississippi State Medical Association and the Mississippi Hospital Association, serving on the law committees of both groups; and the Northeast Mississippi Medical Society, of which he has been president. He has been speaker of the House of Delegates for the state medical organization since 1938.

He was a member of the first State Hospital Commission in Mississippi, which set up the system of charity funds for hospitals in the state. For many years he was a county health officer ,and during the administration of Governor Whitfield, he was a member of the board of trustees for the State Hospital at Whitfield. Nine counties in north Mississippi used his services as radiological consultant for the Selective Service during the recent war.

As active as he has been in the realm of his profession, Dr. Williams has also devoted his energies to civic and community enterprises. He installed the Houston telephone system, which was later bought by a larger company. As president of the board of trustees for the schools of Houston he has given many years of valued service in behalf of the educational system of the town. The Exchange Club, as a member and as president, the Chamber of Commerce, and other civic organizations have benefited from his investment of time, money, and plain hard work throughout the years.

Dr. Williams holds the esteem of his fellow Presbyterians in Houston, who have called on him to serve as an elder and as superintendent of the Sunday school. His Bible class has contributed much to the church life, as have his tracts on baptism and the Lord's Supper.

To balance the seriousness of their work, nearly all physicians choose some avocation or hobby to which they can turn in rare moments of leisure. Dr. Williams' choice was Masonry. He is Past Grand Master and Grand Lecturer of the Grand Lodge of Mississippi, F. and A.M.; Past Grand High Priest of the Royal Arch Masons of Mississippi; Past Eminent Grand Commander, Knights Templar of Mississippi; and Past Grand Patron and chairman of the Committee on Jurisprudence of the Eastern Star in Missippi. He has also served as a committeeman in the General Grand Chapter, Order of the Eastern Star. He authored the Masonic Digest of Laws for Mississippi and the Eastern Star Digest of Laws for Mississippi, and with his wife, Mrs. Florence Ford Williams, he prepared the Book of Instruction for Mississippi O. E. S.

No man's life story is complete unless it includes his family. We congratulate his daughter, Mrs. Powell Godwin of Philadelphia, and his son, Felix T. Williams of Memphis, on their rich heritage, and pause to pay tribute to Mrs. Williams, who has been a noble companion and helpmate.

For more than half a century Dr. Williams has served the people of his city, county, and state as physician, leader, and friend. He holds, however, that increase of years merely broadens his opportunities and responsibilities to his fellow men. At eighty he says that he has no plans for retirement—there is too much yet to be done!

Tonight we are writing the first page in an important division of medical history in Mississippi. According to the Guidebook of Life service is the measure of greatness. Tonight we honor a man from an honored group who have served long and well. With vision and courage, with love and determination, they have carried high the banner of medical patriotism. They have drunk deeply from the fountain of God's scientific laws to find the remedies that save human life, in order to give it greater volume and to add to it length of years. Carefully they have dressed human wounds while God has done the healing. Not only have they ministered to the physical needs of the people, but they have also been a mighty influence in building a citizenship that has made our nation strong and secure. While they have applied their preventive and curative measures to physical man, they have at the same time helped to dial the human heart and soul to the Creator's broadcasting station. They have been and are strong spokes in the wheel of our civilization.

During the emergencies of the World War they carried on in a miraculous way. By keeping mentally and physically fit, and by exercising dauntless courage and power of purpose and passion for service, they have demonstrated that a man may be more useful to human society every day that he lives, even though the span of years reaches to a full century.

We might have searched the state for many weeks with a lantern in our hands, but we would not, we could not, have found one man who better typifies the spirit of the Fifty-Year Club. We love him as a brother in a great profession, we appreciate his efficiency in medical service, we admire his courage in keeping on keeping on ,and we are ever grateful for the part he has played in building Christian citizenship in this section. He believes that acres of diamonds may be found in one's own backyard. To change the picture a bit ,he let down his bucket in the community where he was born, and has continued to draw it up there throughout the years. Tonight that bucket overflows with love and good will and appreciation from his people who have thronged here to do him honor.

Like Joshua and Caleb, Dr. Joshua Rice Williams is saturated with sturdy faith and optimism. No matter how cloudy the day, he believes that "beyond the clouds is the sun, still shining." With Emerson again he holds that "character is higher than intellect." He is a great philosopher, a keen-minded diplomat, a gentle humorist, and an expert in the art of going around the difficulties that he cannot go through. From the path of right he is not swayed by friend or foe. He is a born leader of men because he leads in the path of justice as a friend. In open forum no one can yield more graciously or fight more valiantly. He adheres to the philosophy that "one man with information and courage, if he be right, makes a majority."

Dr. Williams is blessed with a double portion of native ability—legal, scientific, and diplomatic—but evenso his kind heart and simple faith constitute his greatest source of power.

Dr. Williams, it is a great pleasure and a signal honor to deliver to you this certificate of membership and to place upon your breast this pin making you officially a member of the Fifty-Year Club in the Mississippi State Medical Association.

RESOLUTIONS

Life is precious to youth with its ever-expanding hope; dear to the mid-period with its accumulating responsibilities and appreciation of its opportunities and in old age there are precious memories with the recurring nostalgia of the varied success that has crowned life's efforts.

Whether long in years, that is indeed a long life that is well spent, for success is commensurate not in terms of years on God's foot-stool, but in the way those years are spent.

Whereas during the current period of 1947, this organization and communities nearby have suffered the loss of many of its professional confreres, namely:

Dr. Robert Price, Jackson, Mississippi
Dr. David Z. Coats, Magee, Mississippi
Dr. Ross E. Anderson, Jackson, Mississippi
Dr. John Darrington, Yazoo City, Mississippi
Dr. J. M. White, Jackson, Mississippi
Dr. S. W. McGowan, Bolton, Mississippi
Dr. R. L. Hagaman, Raymond, Mississippi

and these men, in a quiet and unobtrusive way, did keep the even tenor of their days, and truly did they demonstrate that greatness is determined by service, therefore

BE IT RESOLVED, by the Central Medical Society of Mississippi, in regular session, this the second day of December 1947, that in the passing of these fellow practitioners, our society has suffered a great loss; organized medicine, worthy exponents of the healing art; their communities upright citizens; their families, loved ones, whose exemplary lives do show that their faith was well founded in the beliefs that there is a home beyond the grave, and

BE IT FURTHER RESOLVED, that these resolutions be spread upon the minutes of this Society and copies be furnished the families of our departed friends and associates in medicine.

Signed: J. P. WALL, M.D.
H. R. SHANDS M.D.
W. H. WATSON, M.D.
Committee

DEATHS

Dr. Willis F. Cotten of McComb, Mississippi, died at the Baptist Hospital in New Orleans, Louisiana, on January 19, 1948, of a kidney ailment.

Dr Cotten was born in Franklin County, Miss., on February 21, 1895. He received his pre-medical education at Mississippi College, and studied medicine at the University of Mississippi and the University of Virginia, earning his M. D. degree at the latter institution. He served his internship at the T. C. I. Hospital in Birmingham and his EEN&T training at Grace Hospital in Detroit. He was a member of the Pike County Medical Association, Mississippi State Medical Association, Southern Medical Association, and the American Medical Association. He was a Fellow of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society, American Academy of Ophthalmology and Otolaryngology, and the American Society for the Study of Ophthalmologic and Otolaryngologic Allergy. He was certified by the American Board of Otolaryngology in 1942. He served as chairman of the EEN and T Section of the Mississippi State Medical Association in 1942. He served on the official staff of the IC Railroad Physicians and Surgeons for a number of years and was on the staff of the McComb City Hospital and the McComb Infirmary.

He was also active in other fields. He was a veteran of the first World War and an active member of the local Post of the American Legion which he had served several times as post commander. He was active in community service work and served as president of the McComb Chamber of Commerce in 1947. He was an active member of the First Baptist Church and served on the board of deacons.

He was married to Miss Christine Gardner on June 15, 1928. He is survived by his widow, his mother and two brothers.

Funeral services were held at the First Baptist Church in McComb, followed by interment at the Hollywood Cemetery.

DR. J. G. MARUM

Dr. Joseph Gottlieb Marum, 55, died suddenly of a heart attack at his home in Greenville.

Dr. Marum was for nine years radiologist and roentgenologist of the Drs. Gamble Brothers and Archer Clinic.

Born in Cologne, Germany, he received his early education in the schools of Cologne. He attended medical schools in Cologne and Munich and received his M.D. degree from the University of Berlin. For seventeen years, from 1921 to 1938, Dr. Marum engaged in the practice of medicine in Cologne. He came to the United States and to Greenville in 1938. He was a member of the American Society of X-ray Technicians.

Dr. Marum was a member of the Hebrew Union Congregation of Greenville. He was a member of the Kiwanis Club until two months ago when he resigned because of ill health.

He leaves his wife, Mrs. Illa Marum and his mother, Mrs. Eugene Marum, both of Greenville; a brother, Ernest A. Marum of Los Angeles, Cal., and a sister, Miss Clara Marum of New York City.

DR. NOEL C. WOMACK

Dr. Noel C. Womack, prominent local physician and one of the founders of the old Jackson Infirmary, died at his home in Jackson, December 26.

Ill for several months, Dr. Womack passed away at 1:15 a.m. at the home of his mother and father-in-law. He had resided on his Live Oaks Farm in Pocahontas.

Born August 26, 1879, at Dibrell, Tenn., Dr. Womack received his public school education there and moved to Jackson in 1906 after attending college in Nashville and Jefferson Medical School in Philadelphia, Pa.

He was one of he organizers and the first president of the Mississippi State Pediatric Society and held membership in all of the medical societies.

He was a member of the board of stewards of the Galloway Memorial Methodist Church.

Besides his wife, the former Mary Middleton Lane, he is survived by a son, Dr. Noel C. Womack, Jr., Philadelphia, Pa.; a daughter, Mrs. Mary Lane Wagner, Jr., Suffield Conn.; four sisters, Mrs. A. M. Wills, Memphis; Mrs. Richard Thornton, Brownsville, Tenn.; Mrs. Macon Thornton, Miami, Fla.; and Mrs. Needham Coppedge, Miami, Fla.; a brother, Walter W. Womack, Ft. Worth, Fla.; and a grandson, N. C. Womack, III.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

Relative Frequency of "Subclinical" Poliomyelitis. Daily Temperature Studies on Intimate Contacts of Infectious Patients—Albert E. Casey, William I. Fishbein, Irving Abrams and Herman N. Bundesen, American Journal of Dis. of Children, 72:661-74, December 1946; Quarterly Review of Pediatrics, Vol. 2, No. 3, August 1947.

"A clinical study was made of the incidence and features of illnesses observed among three groups of children: 22 who had had intimate contact with cases of paralytic poliomyelitis; 15 living on the same block as, but having had no contact with, cases of poliomyelitis; 37 noncontact children of the same age living ten to fifty blocks distant.

'Intimate contact' is defined as spending more than ten minutes in play or other close contact with a patient or suspected patient in the infectious period. The latter is defined as the period three days before to three days after the onset of the prodromal period. The occurrence of fever and an elevated spinal fluid protein was used as aids in the diagnosis of poliomyelitis. For this study fever was defined as: 1) axillary temperature of 98.8° F. or higher on two or more days, consecutively of alternately, or 2) axillary temperature of 99.4° F. or higher on a single day. Spinal fluid protein values of 45 mg. per 100 cc. or higher were considered significant.

Among the 22 children who had been in contact with a patient (or suspected patient) with poliomyelitis in its infectious period, 14 showed fever between seven and twenty-five days before exposure. None of the 15 noncontacts living within the same block as the patient had fever. Three of the 37 control children living ten or fifty blocks distant from the patient with poliomyelitis had fever compatible with but not diagnostic of poliomyelitis, and 3 others had fever considered incompatible with poliomyelitis (vaccinia, coryza and diarrhea). Therefore, among the 52 noncontacts and control children there were 3 febrile illnesses compatible with poliomyelitis (6 per cent). In contrast, 14 of the 22 contacts (64 per cent) exhibited fever and 9 were definitely diagnosed as poliomyelitis.

Of the 14 febrile contacts one developed paralytic poliomyelitis, two had non-paralytic poliomyelitis, four had "abortive" poliomyelitis. Though the seven remaining febrile contacts showed no other clinical signs or symptoms, determination of the spinal fluid protein in four of the seven disclosed values of 45, 52, 60 and 70 mg. per cent respectively after the onset of the fever.

The evidence, although scant and needing the benefit of continued investigation, is sufficient to indicate that perhaps 98 per cent of poliomyelitis is a mild, widespread, highly communicable disease of young children leaving no residual paralysis."

COMMENT

The authors of this paper present very interesting and impressive evidence and study of the contact theory on the spread of poliomyelitis; however we are not sure that contact infection is the whole answer to the mode of spread of epidemic poliomyelitis. There has been and is now being conducted a wide range of study and research in regard to the whole subject of poliomyelitis, and perhaps something more conclusive will be forthcoming within the next year or so.

SURGERY

Homologus Serum Jaundice in Recipients of Pooled Plasma—Published in the J.A.M.A., Vol. 135, No. 5, October 4, 1947.

A considerable number of cases of homologous serum jaundice developing in patients having received pooled plasma led the authors to investigate the incidence of this complication. The study was carried out in upstate New York, exclusive of New York City, and a total of 649 recipients of pooled plasma formed the basis of this work. Only those patients on whom adequate follow-up of at least 6 months were included.

Of 649 recipients of pooled plasma, 29 developed a syndrome characteristic of homologous serum jaundice and of these, four died. In two of these death was primarily ascribed to hepatitis and in two jaundice was a contributory cause. This shows an incidence of infectious hepatitis of 4.5 per cent and a mortality rate of 14 per cent. Of the 29 cases who developed jaundice only nine had been given other blood therapy (whole blood).

The median age of the jaundice cases was 57 years as compared to 39 years for the recipients in whom jaundice did not develop. A total 385 identifiable "lots" of plasma were used and of these 18 or 4.7 per cent appeared to be responsible for jaundice. In view of the apparent low attack rate among recipients many icterogenic "lots" may have remained undetected because of the small number of trials. The type of original illness seemed to have no bearing upon the development of hepatitis and the distribution between the sexes was about equal. There were 56 household contacts of the jaundice patients but there were no cases of hepatitis in these contacts.

The elimination of the etiological virus calls for intensive research.

The exclusion of donors with a history of jaundice and the performance of various laboratory tests will serve to eliminate only a fraction of the asymptomatic carriers of the virus. J. W. Oliphant has demonstrated the inactivation of the virus by ultra violet light and the method of large scale irradiation of Levinson may prove of great value.

The conclusions drawn are that plasma should be administered only when the clinical indications are absolute so that the benefits to be derived clearly outweigh the risk of contracting homologous serum jaundice.

State Board of Health

Felix J. Underwood, M. D.

TRENDS AND COMMUNITY OBJECTIVES FOR PUBLIC HEALTH EDUCATION*

Ira Hiscock, Sc. D.
Professor of Public Health
Yale University, New Haven, Conn.

Our opportunity for peace, freedom and fullness of living came at a great price. The values of this opportunity will be realized by general acceptance of the responsibilities for clear thinking and joint planning on a world scale in a community of nations. Plans to reach this goal must be inspired and implemented by similar coöperative action in local communities.

Our primary objectives are the conservation and the perfection of the health of the individual members of society. Health education is the intelligent, consistent and persistent application of means adapted to induce experiences which favorably influence knowledge, attitudes and actions for these purposes. Individuals and groups engaged in public health occupy a strategic position to hasten the attainment of this goal.

This process of thinking and action is apparently familiar to members of the Mississippi Public Health Association. Your eminent leader in public health in this State and past president of the American Public Health Association and of the State and Territorial Health Officers, Dr. Felix J. Underwood, recently wrote as follows:

" . . . Always underlying the programs are the needs, and in order to meet them organization is done at the base of operations, the community. Motivation, understanding and action on the part of individuals, families, communities, and larger units are essential to bridge the gap between the available knowledge and what the people do about their health."[1]

Thin sectors and gaps in community service call for the type of joint planning and coöperative action which carried the Allies through successful military campaigns. The situation may be considered within the framework of 11 F's, two of which have been mentioned as objectives, namely Freedom and Fullness of living. Friendliness and mutual understanding of individuals and groups concerned are basic essentials. The Hawaiian says, "The canoe is not swamped by the outside wave but by the inside wave." For constructive community planning the importance of cordial inter-agency relationships cannot be over-emphasized. Peace and harmonious living require coöperation based on understanding.

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*Presented before the Annual Meeting of the Mississippi Public Health Association, Jackson, Miss., Dec. 8-10, 1947.

Foresight to appraise the problems and resources as a basis of action is fundamental. "A fog of uncertainty and confusion about tomorrow sometimes envelops us. David Lilienthal in his Democracy on the March notes that "The fog is caused largely by words, words without reality in the world as it actually is; to dispel this murkiness we must see the reality behind the words." Or viewing the scene, as pictured by Lewis Carrol, with Alice on the Queen's croquet ground, we may observe that "The players all played at once without waiting for turns, quarreling all the while—not seeming to have any rules in particular; at least if there are, nobody attends to them and you've no idea how confusing it is all the things being alive . . . " Our task involves dealing with human beings very much alive and with varying customs, languages, races, resources and traditions, thus adding to the complexity of the situation.

In developing plans for a program, an effort is made to place **F**irst things first, to emphasize the importance of **F**itness for board and staff members, paid and volunteer. **F**itness for leadership is a key to progress.

Reasonably adequate **F**unds (a minimum of $1.25 per capita, and $2.00 for an effective program) are required to meet pressing needs. The importance of **F**lexibility of program has been increasingly recognized at national and state and local levels of government. Regional and district planning is receiving deserved and promising attention.

What are some of the other **F**acts which focus on need and responsibility? How do these facts for the national situation also reflect the problems in Mississippi?

1. Health means more than avoidance of premature death or prevention of sickness; it means a condition providing for the joys and satisfactions of living. The constitution of the World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absense of disease or infirmity."

2. A high proportion of young men and women are classed as unfit for military service; industrial losses and school absenteeism are excessive due to impaired health.

3. The toll of home accidents is staggering and too little has been done to remedy the situation; drownings and other accidents are still excessive.

4. The subtle and complex influences of nutrition upon efficiency and vigor and satisfaction are only partially understood; there are serious gaps in mental hygiene; available information and advice concerning protection from diphtheria, syphilis, tetanus, tuberculosis and whooping cough reach a limited audience.

5. A shortage of nursing personnel for both institutional and home service is reported in all areas; some 15,000,000 people in rural communities are without physicians and hospitals; facilities for chronic and convalescent care are inadequate; 1800 counties are without basic public health services.

Programs can be arranged in response to recognized needs and interests, all agencies and all groups concerned making their maximum contribution in a coöperative plan for general community welfare. There is heartening evidence of increased coöperation between health and education departments in the planning and conducting of school health programs through joint committees. These groups reflect the view that, 1. Each group has interest and responsibility; 2. Neither group can do the job alone; and 3. Coördination of efforts brings the greatest returns. To quote from Vannevar Bush in **Science, the Endless Frontier,** "Science can be effective in the national welfare only as a member of a team, whether the conditions be peace or war."

Throughout the country there is need to give more attention to local health protection.[2] Studies have shown that if we had 1200 units of a size adequate for efficient operation instead of some 3000*, a basic minimum of health protection could be provided at a reasonable cost of only a little over one dollar per year per person served. A strengthened official health organization with the understanding and backing of the medical, dental, and other professional groups, will give a strong base for the operation of coördinated services. We also need more teamwork among the 1200 voluntary health agencies and joint planning of these agencies with official agencies. In earlier years the Red Cross aided in the development of local health councils and of district health programs. Is this agency being fully utilized? We need in every state and in every local area a council to insure effectiveness of existing machinery designed to serve the child in health, welfare, education and recreation and to develop a more vital program for the conservation of human resources and the building of the young America of the future.

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*Under existing state laws there could be as many as 38,000 authorized jurisdictions.

J. B. S. Haldane has pointed out that our fight against microorganisms "extends beyond the boundaries of nationality, race or even species. Every Rumanian infected with infantile paralysis, every Indian with smallpox, every rat with plague, diminishes the probable length of my life." For many other reasons our society, in people, and in community life extends beyond any single jurisdiction in which we happen to live or work. "It is necessary to believe in man," says Archibald MacLeish, "not only as the Christians believe in man, out of pity, or the Democrats believe in man, out of loyalty, but also as the Greeks believed in man, out of pride."

The final **F**'s in this framework designed to meet the challenging opportunities and responsibilities ahead introduce two features required to complete the mission and reach the objectives, namely, **Fun**, and **Faith**. Those who are engaged in this important enterprise must come to know and understand each other, work and play together and find time for relaxation and for gratification of cultural interests. They must likewise have abundant faith in each other, in their jobs, and in their common goal.

An atmosphere of commercial or utilitarian interest may overshadow intrinsic values of community enterprises essential for freedom and fullness of living. Competition for public attention demands that health education be positive, lively and of sound content. The health educator in this setting has become recognized as an important member of the public health team, without assuming the task of everyone else, to help with the bridge-building job to which earlier reference was made. To be specific, we might refer to Overstreet's[3] seven bridges as illustrating the scope and variety of the task of influencing public opinion and of enlisting participation:

1. The bridge of a story to tell ("to make public health service come alive in people's minds.")

2. The bridge of words—("Do you use the right words? Or do you use words that repel or confuse or frighten or mislead?")

3. The bridge having to do with our manner toward people. ("Do you and your staff, including your receptionist and the one who answers your telephone, have manners that repel or attract?")

4. The bridge of right publicity attitude (including effective writing).

5. The bridge of association with other community enterprises. (medical and health library, hospital construction, etc.)

6. The bridge of knowing how to make a speech.

7. The bridge of "awakened community leaders who will tell your story for you." (Medical and dental societies, chambers of commerce, P.T.A., colleges, etc).

Though the official health agency should lead in the planning and development of a program, health education cannot and should not be the exclusive function of any one agency. Only by the coöperation of all related official and voluntary professional agencies can a community program reach its greatest effectiveness. This activity is the concern and responsibility of all members of the staffs of all the health organizations in the community—doctors, dentists, nurses, sanitarians, clerks—each contributing wherever possible through personal contacts and services, visualizing the individual as a whole, the family as a whole, and the community as a whole.

Again referring to the interlocking relationships between official and voluntary health agencies with schools and to opportunities of the health educator as a part of a team, there is growing recognition of the importance of the classroom teacher in the school health program. She is the key person in health instruction. in planning for healthful school living—which includes attention to mental and emotional health—, in caring for emergency sickness or injury, and in detecting through observation children who need medical examination. These factors have aroused widespread interest in the pre-service preparation of teachers for their role in the school health program, a responsibility primarily of teacher training institutions and for the in-service education of teachers, in which state health departments and state education departments may coöperate appropriately and effectively. Additional helps for teachers will soon be available through the report on **Health Education** now in preparation by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

These concepts of health education call for a social philosophy and a plan of operation that will translate knowledge into living habits for the benefit of all. There is required likewise the continuing appraisal of methods and materials and the evaluation periodically of the effectiveness of health education procedures.

To facilitate coöperative planning and united action, a community health education committee or council is helpful, with a similar council for the state. In the words of David Hume, although spoken nearly 200 years ago, "The mutual dependence of man is so great in all societies that scarce any human action is entirely complete in itself, or is performed without some reference to the action of others."

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PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Nov. 1947	Nov. 1946	Nov. 5-Yr. Av.
Poliomyelitis	11	31	12.0
Bacillary Dysentery	2	339	316.2
Dengue	0	0	.2
Diphtheria	36	53	69.4
Influenza	31	4046	4180.6
Measles	18	343	166.6
Meningococcus Meningitis	4	3	8.0
Other Forms Meningitis	3	1	3.0
Pellagra	0	150	118.2
Pneumonia	48	1162	984.2
Pulmonary Tuberculosis	159	162	143.0
Scarlet Fever	34	48	67.6
Smallpox	0	1	1.4
Tularemia	5	6	3.8
Typhoid Fever	2	5	6.4
Typhus Fever	3	5	12.0
Undulant Fever	3	22	6.4
Whooping Cough	7	489	439.8

	Dec. 1947	Dec. 1946	Dec. 5-Yr. Av.
Poliomyelitis	3	21	1.4
Bacillary Dysentery	1	256	286.2
Dengue	0	0	0.0
Diphtheria	25	55	42.6
Influenza	53	4584	14344.2
Measles	23	190	228.0
Meningococcus Meningitis	5	9	12.6
Other Forms Meningitis	4	3	5.6
Pellagra	0	126	102.8
Pneumonia	44	1498	1713.2
Pulmonary Tuberculosis	107	324	155.2
Scarlet Fever	27	34	65.2
Smallpox	0	0	.4
Tularemia	4	4	4.4
Typhoid Fever	1	6	3.4
Typhus Fever	4	9	9.4
Undulant Fever	2	16	5.0
Whooping Cough	15	468	398.0

GENERAL PRACTIONER'S MEDAL

At the interim session of the House of Delegates of the American Medical Association, Cleveland, Ohio, January 5, 1948, Dr. Archer S. Sudan, Colorado, Dr. Jacob T. Oliphant, Indiana and Dr. W. L. Pressly, South Carolina, were nominated as the three top candidates for the General Practitioners' Medal, which was established by the Board of Trustees of the American Association for the general practitioner who has rendered most exceptional service to his community. This award was made for the first time in 1948. These candidates were presented to the House of Delegates, who first voted by ballot following which Dr. Sudan, having received the largest number of votes, was unanimously elected by acclamation.

According to the rules, any organization, medical or lay, can and is urged to nominate some outstanding general practitioner to be the recipient of this award.

In Mississippi, there is in every community a general practitioner who has given his life in the practice of his profession, is beloved by all who know him because of his unselfish devotion to his people, who is worthy of being nominated for this honor.

It is the thought of your delegate that the various medical societies in Mississippi should study their doctors and from the more deserving ones select one who is the most qualified for the recognition. Having selected their favorite, have the name presented to the House of Delegates of the Mississippi State Medical Association, along with a brief history of his accomplishments. Then the House of Delegates would select from these nominees the one it favored, and having made such a selection forward the name and the doctor's story to the Trustees of the American Medical Association, whose house of delegates at the interim session will select from the nation, among them our nominee, the one it thinks should receive this award.

The story of Doctor Sudan, although fine, as published in Journal of The American Medical Association, we know we have in our state men just as worthy.

. . . What a world if men in street and mart,
Felt that same kinship of the human heart
Which makes them, in the face of fire and
flood
Rise to the true meaning of Brotherhood.

—Ella Wheeler Wilcox

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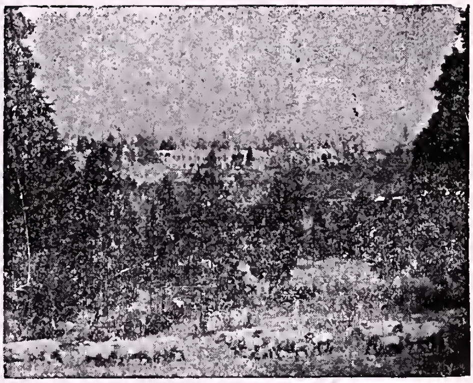

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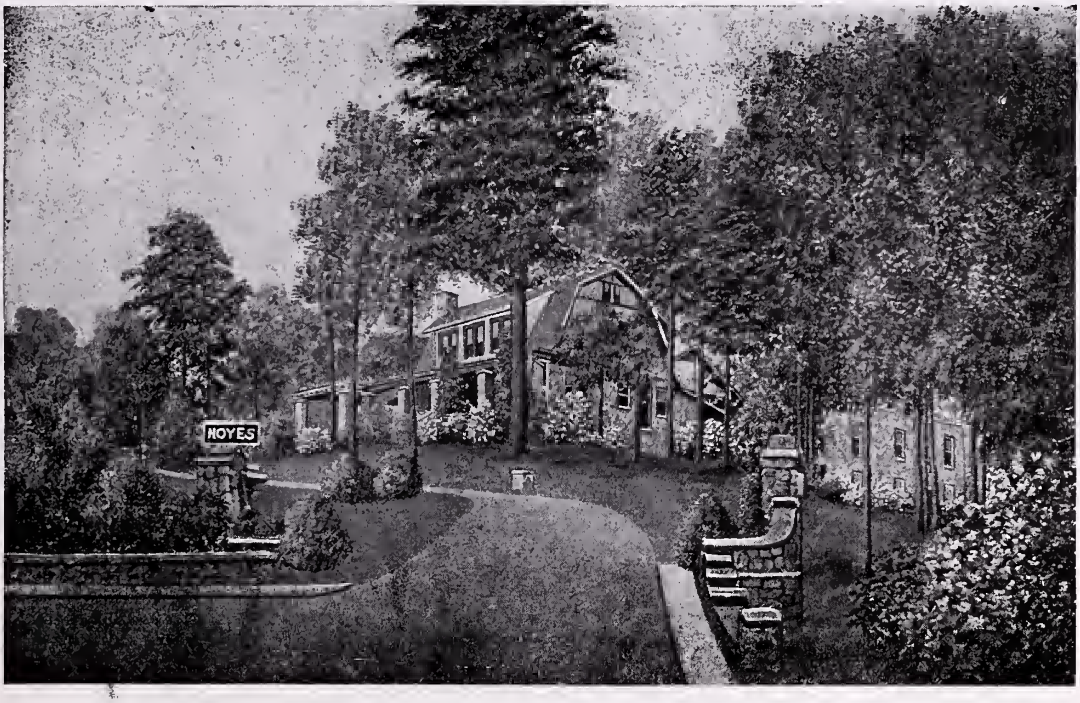

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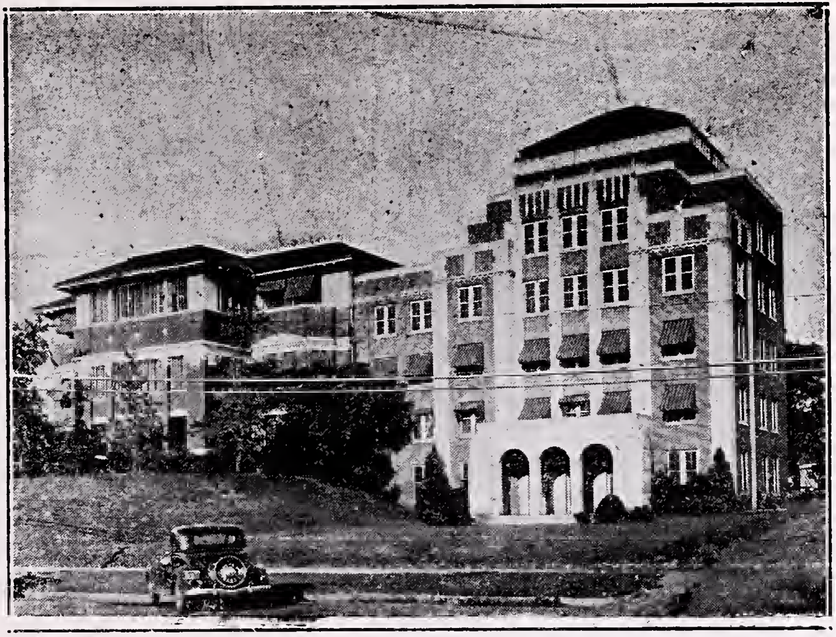

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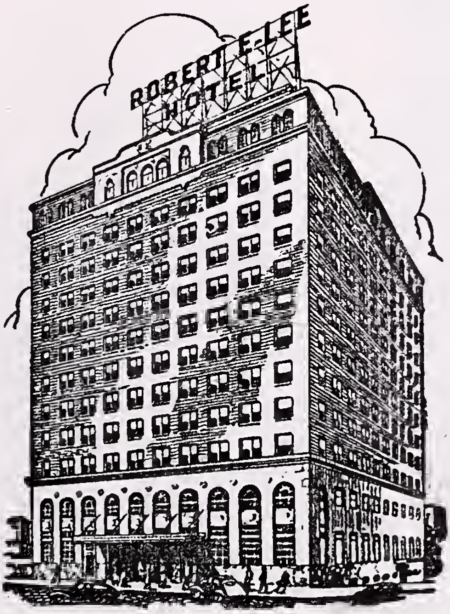

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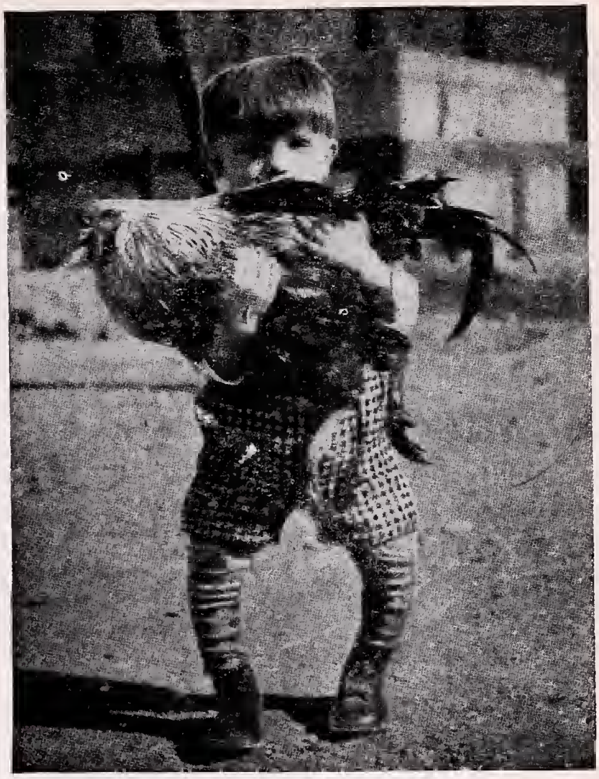

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The Mississippi Doctor

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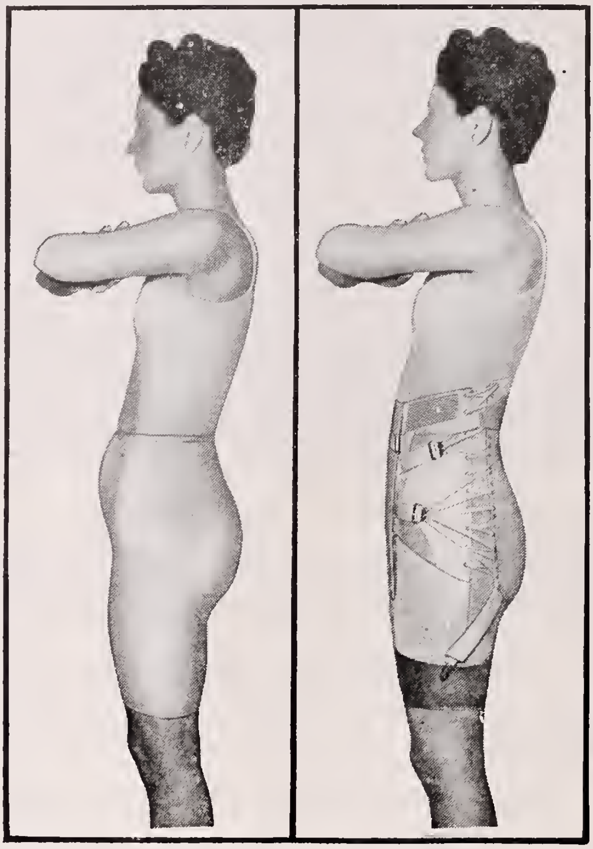

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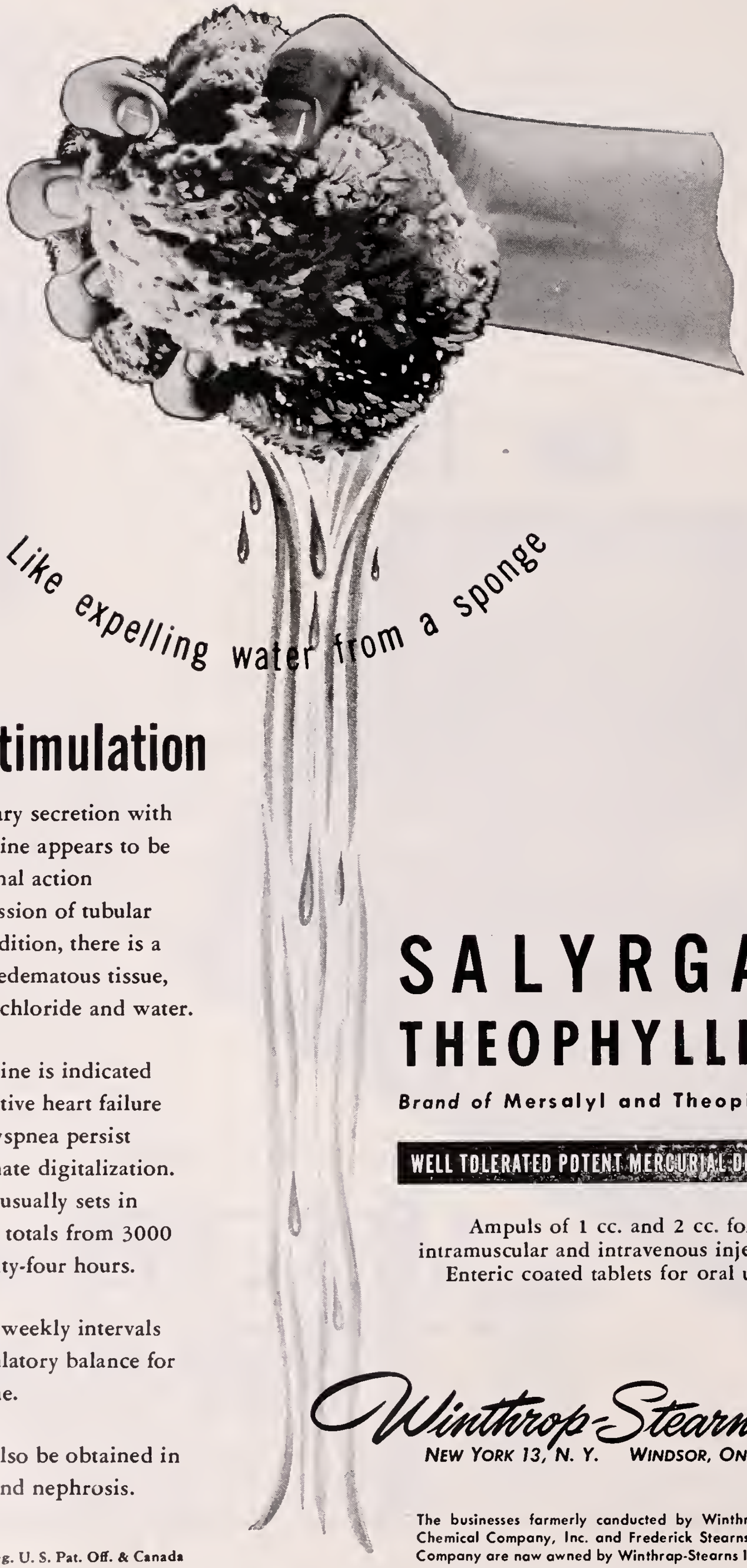
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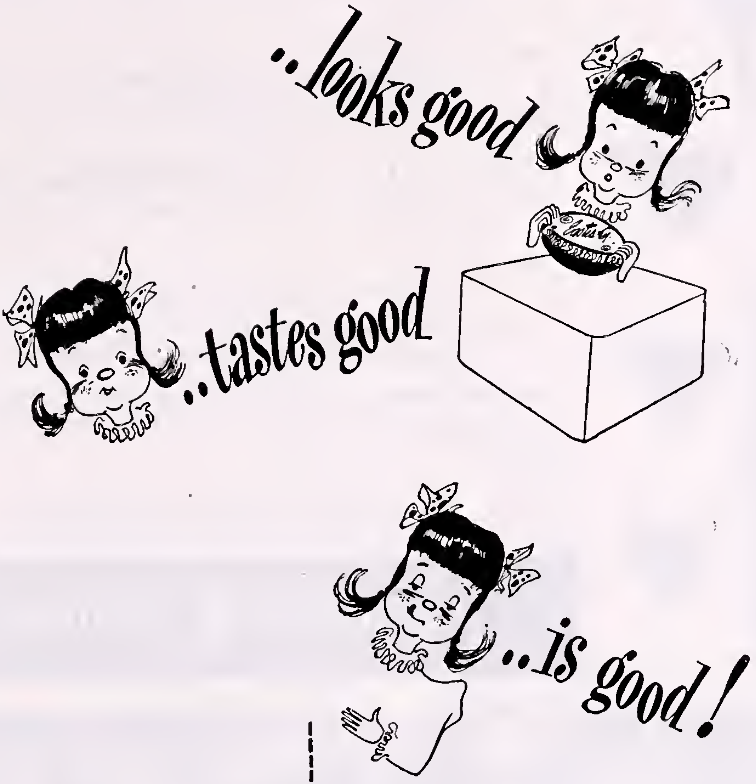

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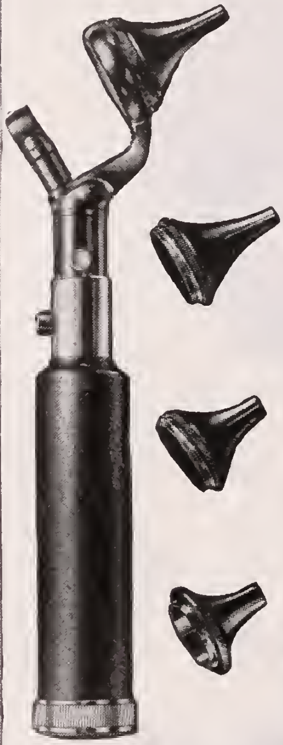

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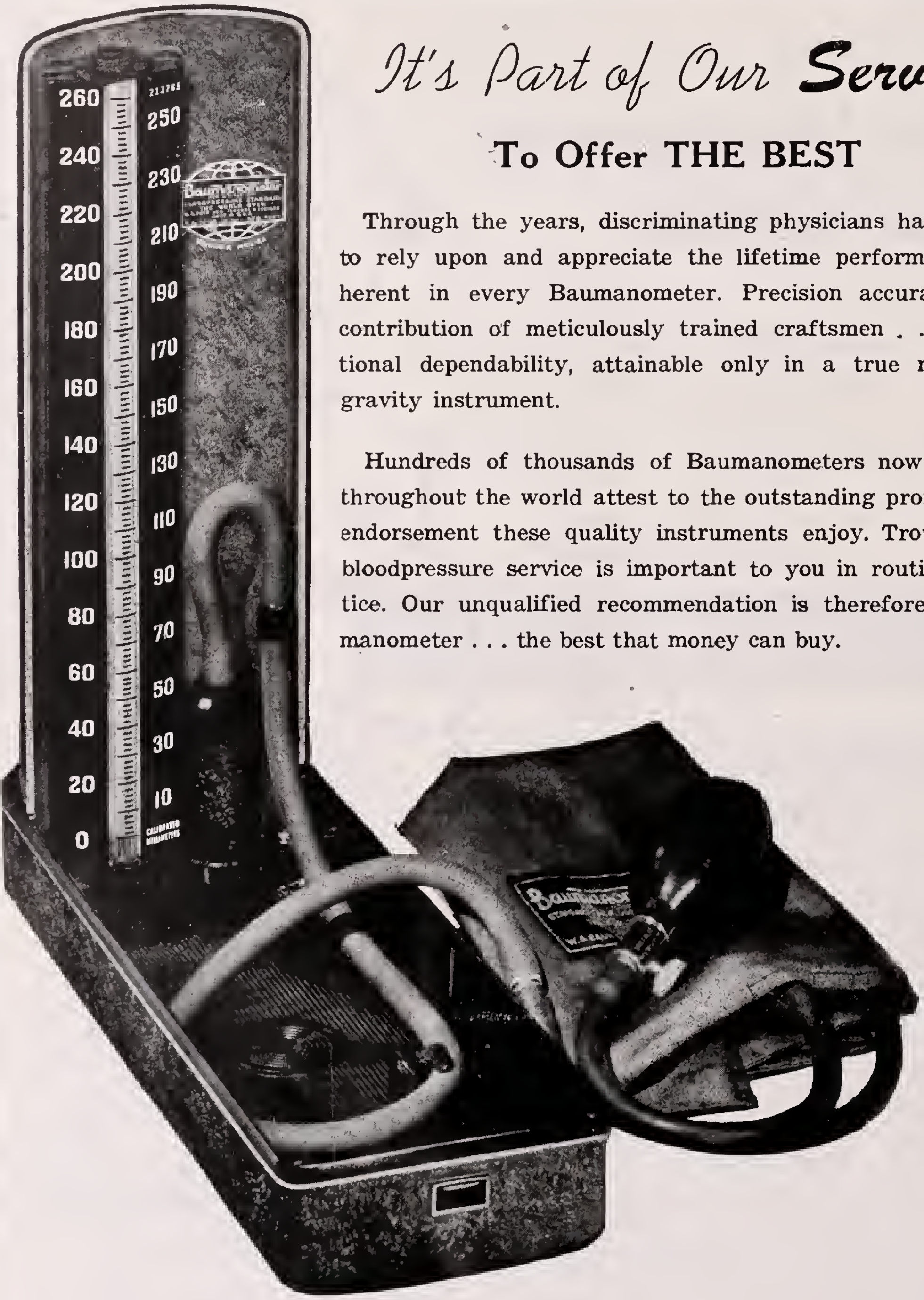
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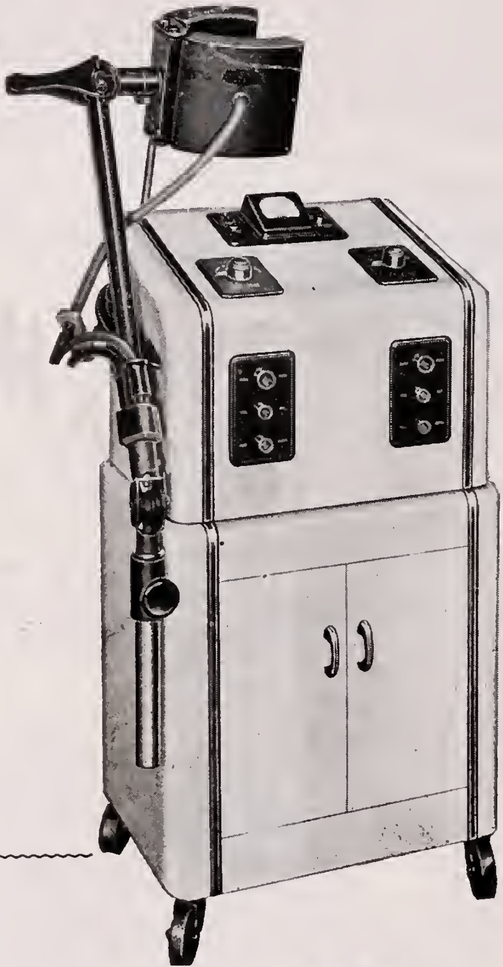

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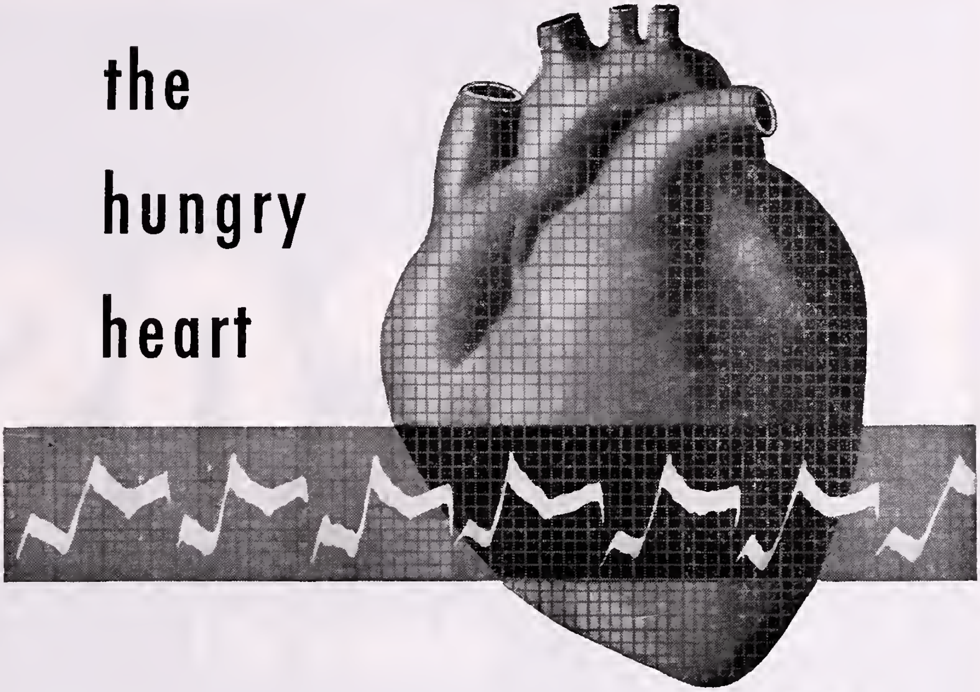
the hungry heart



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Shake the vial vigorously to assure uniform suspension; withdraw and administer the dose intramuscularly with a 20-gauge, 1 1/2-inch needle. Although the upper outer quadrant of the buttocks is the preferred site of injection, the deltoid or triceps muscles also may be used.

Dosage

For adults, use the same dosage as that recommended for oil-wax preparations. For infants, 0.2 cc. (60,000 units); children up to ten years, 0.5 cc. (150,000 units); and children over ten years, 1 cc. (300,000 units).

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Bronchial Obstruction*

PAUL H. HOLINGER, M.D.
Chicago, Illinois

BRONCHIAL OBSTRUCTION is a fundamental pathological process which plays an extensive, variable role in pulmonary pathology. Its influence on the lung is usually determined more specifically by the location of the lesion and the degree to which the bronchus is obstructed, than by the etiology of the process which has produced the obstruction. The effects of an obstruction of a bronchus may be widespread, and not limited to the lung distal to the obstruction. Gross, significant changes in intrathoracic pressure, circulatory changes, extensive suppurative processes and other physiologic and pathologic processes result. It is the purpose of this paper to discuss principally the mechanics of bronchial obstruction, and the signs and symptoms which it produces. The disease entities which may be responsible for the obstructions, as well as those which are produced by them, will serve as illustrations.

ETIOLOGY

A division of the lesions responsible for bronchial obstructions into intrabronchial, endobronchial and extrabronchial groups serves as an etiologic classification. Indirectly, the age of the patient must likewise be considered a factor influencing the pathology produced by a bronchial obstruction. The small caliber of the trachea and bronchi of infants is responsible for extensive pulmonary changes produced by lesions which would be insignificant in the air passages of a child or an adult. Similarly, the very soft nature of the cartilage of the trachea and bronchi of infants permits easy compression of the airway which would be impossible in the more rigid bronchi of adults. The fundamental mechanics of the changes produced by bronchial obstruction in infants, however, are identical to those found in adults.

Intrabronchial obstructions present the most striking and illustrative examples of the various effects of bronchial obstruction. Into this division fall the cases of the lungs, the bronchial obstructions produced by exudates in laryngotracheobronchitis, and atelectasis produced by the thick plugs of asthma. Intrabronchial obstructions may be further subdivided into endogenous and exogenous types. Broncholiths, thick, tenacious, bronchial secretions, inflammatory exudates, and occasionally the material from a lymph node which has eroded through the bronchial wall, comprise the endogenous obstructions. Foreign bodies of every description make up the large list of exogenous elements which produce intrabronchial obstruction. The recognition and description of many phases of the whole problem of bronchial obstruction, with studies of its physiology and morbid anatomy were, in a large measure, possibly through clinical and experimental studies of the effects of these foreign bodies in the air and food passages.

Endobronchial obstructions are due to lesions of the bronchial mucosa, musculature or cartilaginous wall. They have assumed a constantly increasing importance as bronchoscopy and bronchography have demonstrated not only their presence but also their effect on broncho-pulmonary physiology. They consist of inflammatory swellings or cicatricial stenoses of the mucosa which partially or completely occlude the bronchial lumen; the various types of infiltrative, ulcerative, granulomatous or cicatricial tuberculous lesions; the specific inflammatory lesions of syphilis, rhinoscleroma and leprosy with the characteristic deforming scars which these lesions produce when healing; and both benign and malignant neoplasms. The distortions produced by the kinking or twisting of the bronchial walls following such procedures as prolonged artificial pneumothorax, thoracoplasty or injuries must likewise be included in this group, although they should not be confused with compressions of the walls for which many of these same factors may be responsible.

The extrabronchial factors of bronchial obstruction consist of lesions in the mediastinum, heart, or lungs which compress the lumen of a bronchus by pressure from outside the bronchial walls. Of these, enlarged tracheal and hilar lymph nodes, both tuberculous and non-tuberculous are the commonest of the non-neoplastic lesions. These nodes at times assume an extreme size and compress the trachea or both bronchi to the point of asphyxia. Enlarged mediastinal nodes are fairly common in children where, because of the soft nature of the cartilaginous bronchial wall and the relatively small size of the lumens of the major bronchi, severe dyspnea may be produced by a relatively mild degree of enlargement of the nodes. Other extrabronchial lesions producing bronchial compression consist of pulmonary and mediastinal tumors, aneurysms, cardio-vascular anomalies, esophageal tumors or even occasionally esophageal foreign bodies.

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TYPES OF BRONCHIAL OBSTRUCTION

Important as are the factors which produce bronchial obstruction, it is the degree of the obstruction and its location which are responsible for the pulmonary pathology beyond the point of obstruction. In the majority of instances, the mechanics of obstruction can best be described by designating the obstructions as valves in a system of tubes. However, these tubes are only semi-rigid and they are not of constant caliber. Inspiration is accompanied by an expansion of the bronchus and expiration by a contraction. Consequently, numerous factors enter into the mechanics of each particular obstruction, but three types of phenomena form the basic physical effects of bronchial obstruction. These are well known but will be briefly reviewed. The simplest, or by-pass valve, consists of a small decrease in the size of the bronchial lumen such as might be caused by an object lying across the diameter of the bronchus, the lumen remaining large enough to allow air to pass easily to and fro, without appreciably changing the volume of air entering or leaving the lung beyond the point of obstruction. Air passing back and forth over this irregularity is not actually obstructed except in that the column of air is broken to form eddies. Such an obstruction may be produced by a small mucous plaque on the bronchial wall, a small irregularity of the bronchial wall due to an early bronchogenic carcinoma, or a foreign body, such as an open safety pin lying loosely in the bronchus. The only evidence that can be obtained of the presence of such an obstruction is a limitation of motion of the chest on the affected side and a wheeze heard at the open mouth or on auscultation over the chest, loudest at the point of obstruction.

The second type of bronchial obstruction is observed when the obstruction has become more marked. It is characteristically produced by many foreign bodies such as nut kernels, and is present at some stage of the growth of most endobronchial tumors or cicatricial bronchial stenoses. It is designated as a check-valve or ball-valve type of obstruction because air may pass in one direction only, and is dependent upon the physiological bronchial expansion and contraction which occur during normal respiration. Thus, if a foreign body lies in the bronchial lumen, air may pass it freely during inspiration as the bronchus increases in size. During expiration, however, the bronchial wall collapses around the foreign body, obstructing the flow of air out of the lung distal to the foreign body. Another factor contributing to this type of expiratory obstruction is the fact that the force of inspiration is greater than that of expiration. This difference increases with respiratory embarrassment. On subsequent respirations, as more and more air becomes trapped, an emphysema develops in the lung distal to the obstruction. This may be observed by physical signs, on the fluoroscopic screen or on roentgen films taken at inspiration and expiration. The classical signs are a shift of the heart and mediastinum toward the uninvolved side on expiration with a return to the normal position on inspiration; a secondary, depressed diaphragm, emphysema, and widened and immobile intercostal spaces on the involved side.

It is possible, of course, that this type of obstruction may involve only the bronchus leading to a single lobe, and thus may produce a marked emphysema of one lobe alone or a cavity simulating a lung abscess. Similarly, if the bronchiole leading to a lobule is thus involved, a bullous emphysema may occur, which may rupture and produce a pneumothorax. An emphysema extending under the visceral pleura and into the mediastinum may also follow such an obstruction.

A difference between the mechanics of the check-valve and the ball-valve does exist. However, their ultimate action in regard to bronchial obstruction is, in most instances, identical. In the check-valve, the valve seat remains in a constant position, opening and closing as the bronchus expands and contracts. In the ball-valve, the obstructing element moves back and forth during inspiration and expiration, moving into and out of the valve seat. Under certain conditions, the check-valve or the similar ball-valve acts in the reverse manner, allowing air to leave but not enter a bronchus. Under such conditions, the lung rapidly becomes airless or atelectatic and the signs and symptoms are those of atelectasis.

Complete obstruction of a bronchus, allowing no air to pass the obstruction either on inspiration or expiration, is designed as a stop-valve obstruction. Following such an obstruction the air in the portion of the lung beyond is absorbed and the lung becomes airless and shrunken, or atelectatic. A typical example of such an obstruction is the complete occlusion of a bronchus by a round foreign body such as a nail head, or by an extensive, fungating bronchogenic carcinoma. The typical findings which characterize such an atelectasis are the density of the area beyond the obstruction, the shift of the heart and mediastinum toward the involved side, the elevation of the involved diaphragm and narrowing of the intercostal spaces on the involved side. The opposite lung, if the atelectasis is extensive, shows some degree of compensatory emphysema.

SIGNS AND SYMPTOMS

From the foregoing discussion, it is apparent that three principal factors determine the signs, symptoms and ultimate pathology of an obstruction of the lower air passages. The first of these is the level in the tracheobronchial tree at which the obstruction occurs; whether it is in the trachea, a major bronchus, or a bronchiole. Grossly, his may be considered as an **anatomical** factor. The second principal factor is the degree to which the air passage is obstructed; i.e., whether the action produced is that of a by-pass valve, check-valve or stop valve. This factor is a **functional** one. Finally, the signs and symptoms will be dependent, but to a lesser degree, upon the relation of the obstruction to the bronchial walls; whether it is an intrabronchial, endobronchial, or extrabronchial obstruction. This is an **etiologic** factor. As these factors act collectively to produce obstruction they must be considered as they collectively produce the various signs and symptoms of bronchial obstruction.

The symptomatology of bronchial obstruction is for the most part not characteristic of bronchial obstruction per se; certain underlying symptoms are fairly constant, however, influenced in each case by the underlying etiologic factor. Other symptoms become important only when they are associated with a history of broncho-pulmonary pathology. A cough, suggestive of bronchial irritation, may not in itself be sugnificant, but it is one of the most constant symptoms of bronchial obstruction. It may be dry and entirely unproductive for weeks and suddenly be associated with hemoptysis and a foul, purulent sputum produced by a superimposed infection.

A wheeze is also an extremely important symptom because, as stated above, an object lodged in a bronchus permitting air to both enter and leave the bronchus freely will produce none of the changes in the lung distal to the obstruction which are so characteristic of the other types of bronchial obstruction. Thus, with no abnormal physical findings, the wheeze heard throughout the chest, loudest over the location of the obstruction, may be the only sign or symptom of the object if it is nonopaque to x-rays.

Dyspnea is likewise an outstanding symptom of tracheal or bronchial obstruction. All degrees of dyspnea may be noted from the rapidly fatal dyspnea accompanying an obstruction at the bifurcation of the trachea to the sensation of constriction of the chest, or chest discomfort which is a characteristic expression used by patients with early bronchial neoplasms. Pain is not a common symptom unless the underlying pathology is extensive and associated with destructive changes. Patients with sharp foreign bodies in the bronchi rarely complain of pain, although irregular objects such as sharp bone fragments or dental fillings occasionally cause pain which the patient may localize quite accurately to the site of the foreign body.

Certain symptoms should be mentioned as characteristically accompanying lesions that produce bronchial obstructions. The enlargement of the neck and venus engorgement of the neck and chest which follow upper mediastinal neoplasms are examples of such symptoms. Similarly, the hoarseness due to a paralysis of the left vocal cord following involvement of the left recurrent laryngeal nerve in a neoplastic process at the hilus is a symptom of that type of neoplasm.

Hemoptysis is one of the most important

symptoms of any type of pulmonary pathology. In reference to bronchial obstruction it is not infrequently the first evidence of the presence of an intrabronchial foreign body or an early bronchogenic carcinoma. Benign bronchial neoplasms have been known to manifest themselves by this symptom many months before their slow growth occludes the lumen of the bronchus to give further evidence of their presence.

PHYSICAL FINDINGS

In spite of the extremely important role which roentgenology plays in the diagnosis of diseases of the chest, the physical examinations in themselves not infrequently lead to important clues which finally establish the correct diagnosis, in spite of contrasting or negative roentgen findings. One of the most constant signs in almost all cases of bronchial obstruction is a definite limitation of motion on the involved side, independent of the degree of obstruction. Careful inspection of the chest is thus of great diagnostic importance in spite of its apparent simplicity. Other signs and symptoms are more dependent on the degree of the obstruction and on its location.

TRACHEAL OBSTRUCTION

Tracheal obstruction may manifest itself by all the signs and symptoms of acute respiratory obstruction, leading to a rapid fatality; in the other extreme, it may manifest itself only through the simplest sign of obstruction of the airway, a wheeze. Foreign bodies loose in the trachea may be heard flying back and forth from the larynx to the carina during respiration, a finding which Jackson has designated as an "audible slap" which is accompanied by a "palpatory thud" if one palpates the larynx. The "asthmatoid wheeze" is invariably present in such obstructions associated with a cough, dyspnea and, if the obstruction persists, cyanosis. A stridor, distinct from a wheeze, is often characteristic of tracheal obstructions, with the associated indrawing of the suprasternal notch, the epigastrium and the intercostal spaces. Tracheal obstructions due to mediastinal neoplasms not infrequently involve the esophagus as well, and consequently the patient complains of difficulty in swallowing and the regurgitation of food into the trachea due to esophageal overflow.

Ausculatory findings in tracheal obstructions are a loud stridor, wheeze and sonorous rales heard throughout the chest. These are generally accompanied by a diminution of the intensity and excursion of the breath sounds and a change in the percussion note dependent upon the degree of obstruction, i.e., if an obstructive emphysema has been produced, a hyperresonant or tympanitic note will be heard, whereas if the obstruction has produced a drowned lung, the chest will be dull and flat on percussion.

OBSTRUCTION OF A MAJOR BRONCHUS

Partial obstruction of a major bronchus results in complete unilateral, obstructive emphysema. This is characterized by findings of limited expansion, relative hyperresonance to tympany, and a marked suppression of breath sounds on the involved side. It may be accompanied by an inspiratory and expiratory wheeze and occasionally by rales or rhonci. The heart and mediastinum are shifted to the uninvolved side on expiration, and as Eloesser states, the affected side of the chest is dilated rather than shrunken. With complete obstruction to the bronchus one may have the signs and symptoms of pneumonia or an empyema due to the "drowned lung." The distinguishing feature is the marked decrease in size of the lung distal to the point of obstruction compensated by a shift of the heart toward the involved side and an elevation of the diaphragm on the involved side. There are generally many rales present, but these depend to some extent upon the degree of secondary infection. There is a limitation of motion, dullness to flatness on percussion, and frequently marked bronchial breathing and bronchophony in the early stages of the atelectasis with breath sounds entirely absent the atelectasis is of long duration or is extensive.

ROENTGEN FINDINGS

The roentgen aspects of the diagnosis of bronchial obstruction depend upon a complete roentgenographic study of the chest. The practice of basing an interpretation on one or two views of the chest leads to gross errors not only regarding the presence or absence of an obstruction, but also the location of the lesion. Fluoroscopically, areas of density or emphysema, the motion of the diaphragms and the shifting position of the heart and mediastinum on inspiration and expiration are significant. While there are no actual roentgen findings in the bi-pass type of valve construction, unless the obstructing element itself is an opaque object, such as a common pin or a nail lying across the bronchial lumen, the fluoroscopic findings of the next degree of bronchial obstruction, namely that due to a check or ball-valve, are of greatest importance in establishing the diagnosis. Bronchoscopic observations have confirmed the roentgen interpretation that these findings were due to the presence of bronchial obstructions innumerable times. Further studies of these phenomena have been made to demonstrate areas of partial obstruction in which pulmonary tissue composing less than a lobe was involved.

As is well known, obstructive emphysema may be recorded on the roentgenogram by making exposures at extremes of the respiratory cycles and comparing the positions of the diaphragm and mediastinum as well as the density of the lungs on the two exposures. Thus, while a film made on deep inspiration shows both lungs completely inflated in this type of obstruction, the expiration film demonstrates the trapped air and its resulting physiologic phenomena as Manges described them.

The roentgen findings in complete bronchial obstruction are more obvious than those in partial obstruction because of the area of density distal to the obstruction. In complete obstructions of the main bronchi, the well known findings are the shift of the heart and mediastinal structures toward the involved side during both phases of respiration, the elevation and fixation of the diaphragm on the involved side, and the density of the atelectatic lung. These findings are associated with a compensatory emphysema of the opposite side. Complete obstructions of the bronchi leading to single lobes or parts of lobes have less influence on the heart and mediastinal structures although they usually do give roentgen evidence of a shift of these structures toward the involved side, thus aiding in the differentiation between an atelectasis, a consolidation or a drowned lung. Atelectatic lobes or parts of lobes generally assume a more or less triangular shape and are frequently designated as triangular shadows. It may be generally assumed that the bronchial obstruction in such triangular shadows lies at the apex of the triangle. However, it is essential that the shadow be studied roentgenographically in two planes, in order that the particular obstructed bronchus may be accurately localized.

At the present time, a variety of halogenated oils are used, making the practice of roentgen visualization of the tracheobronchial tree a routine procedure in examinations of the bronchopulmonary system. Careful guidance of the oil into the areas requiring particular study is essentially to obtain a complete visualization of the pathology. This may be done only through fluoroscopic guidance of the oil as it enters the bronchi, and the tilting of the patient into such a position that the oil runs into the desired areas, whether they be lower, middle, or upper lobes.

Recent improvements in the technique of planography have added another diagnostic procedure which is available to aid in establishing the presence of a bronchial obstruction.

BRONCHOSCOPY

In recent years bronchoscopy has become a universally accepted procedure. The bronchoscope has come to be considered a diagnostic instrument or speculum which permits direct inspection of the tracheobronchial tree of patients of any age. Indications for bronchoscopy, which were formerly limited to the extraction of foreign bodies, have broadened so that now bronchoscopy is a routine aid in both the diagnosis and treatment of bronchial obstruction. Foreign bodies, tumors, bronchial compression and cicatricial stenoses produce identical physical and x-ray findings. Consequently direct inspection must serve to establish the diagnosis of the actual obstructing agent. In the inflammatory diseases dried plaques of mucus, edematous infiltrations or the cicatrix produced by a healing ulcer may be responsible for the findings of obstruction and only the endoscopic view can establish the correct diagnosis. In cases of neoplastic disease bronchoscopic inspection serves to establish the nature of the lesion through the removal of tissue for biopsy as well as to aid in determining its extent along the bronchial walls. In this respect, bronchoscopic inspection of the upper lobe bronchi and distal portions of the lower lobe bronchi deserves special consideration. Various technical measures are available to the bronchoscopist to make these examinations. The use of retrograde telescopes and bronchoscopic mirrors serves to aid in the inspection of certain portions of the upper lobe bronchi. The use of the biplane fluoroscope to guide curved instruments into the upper lobe bronchi or into distal portions of the lower lobes facilitates the removal of tissue from those areas if they cannot be inspected directly. The use of artificial pneumothorax to bring an upper lobe bronchus into a more direct line with the main bronchus is of extreme value when an upper lobe bronchus is obstructed by a lesion suspected of being a neoplasm.

DIFFERENTIAL DIAGNOSIS

Since a bronchial obstruction is dependent upon some underlying pathology due to a host of etiologic factors, the final diagnosis must be that of the underlying pathology. The differential diagnosis of bronchial obstruction, per se, consists of a consideration of those lesions simulating the effects of partial or complete obstruction. In the first category, bronchial asthma and pulmonary emphysema assume an important role because they both often closely simulate disease due to bronchial obstruction. Possibly even more significant is the frequency with which a true bronchial obstruction is considered a simple asthma. The confusing factor most frequently is the wheeze produced by an obstruction which is asthmatic in character. It differs from an asthmatic wheeze, however, because the latter is usually altered at least temporarily on cough, and is expiratory in nature. The wheeze of bronchial obstruction is uninfluenced by cough and is inspiratory in character. In questionable cases, bronchoscopy or bronchography lead to a final diagnosis.

Lesions simulating the effects of complete bronchial obstruction or atelectasis are more numerous and consist essentially of pneumonic consolidation, empyema, and tumors. Tumors large enough to give physical evidence of pulmonary pathology may usually be recognized as such by their roentgen configuration. They are, of course, not infrequently involved in a process producing bronchial obstruction, when their differentiation from the atelectasis they have produced becomes almost impossible. Planography and over-exposed roentgen films may aid in such differentiation, and again bronchoscopy and bronchography are indispensable.

Atelectasis is most frequently confused with intrapleural collections of fluid. A persistent atelectasis having had an acute onset closely simulates a pneumonia followed by empyema. The actual differentiation depends on the position of the heart and mediastinum, fluid causing them to be pushed away from the involved side and atelectasis drawing them toward the affected side. The shifting dulness of fluid is another differentiation point. Since an empyema may follow an acute bronchial obstruction, however, the actual diagnosis may be made only after the fluid is withdrawn and the lung fails to expand.

The differentiation of an acute pneumonic consolidation from an acute atelectasis is usually dependent upon the history and the size of the involved lung in relation to its normal size. Post-operative massive collapse of the lung is frequently confused with post-operative pneumonia, but a careful physical and roentgen study of the position of the heart will be the most important distinguishing characteristic.

Added difficulty is encountered, however, in cases of complete bronchial obstruction upon which is superimposed a severe suppurative infection to produce a "drowned lung." In this case the products of suppuration so completely fill the bronchi and lung distal to the obstruction that it retains its normal size and shape, yet has the physical and roentgen findings of consolidation. Differentiation in such a case may only be made through a history suggestive of bronchial obstruction, a failure of the pneumonic process to subside, and the inspection of the involved bronchus with a bronchoscope.

SUMMARY AND CONCLUSIONS

Bronchial obstruction is often the underlying cause of extensive bronchopulmonary pathology. The changes in the respiratory and circulatory systems caused by bronchial obstruction can be most readily demonstrated clinically and experimentally by foreign bodies in the bronchi. From a clinical standpoint, cases of unresolved pneumonia, "atypical pneumonia," lobar or segmental atelectasis often have some type of bronchial obstruction as their underlying etiology. Physical examination and x-ray studies are of paramount importance in establishing the presence of bronchial obstruction. Routine bronchoscopic examinations may be made in instances of suspected bronchial obstruction to determine the exact nature of the pathology. The increased incidence of bronchogenic carcinoma, and the recognition of other types of bronchial tumors makes this subject of utmost importance. Delay in diagnosis while observing the change in the appearance of a shadow demonstrated on x-ray of the chest may lead to irreparable lung destruction. It may also result in growth of a bronchogenic carcinoma from an operable tumor to a hopelessly inoperable one.

Congestive Heart Failure

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THE TERM congestive heart failure is used to denote the improper unequal function of a failing heart, producing an elevation of venous pressure and edema by overcrowding of the blood vessels. This condition should not be classified as a separate entity because of the fact that it is the end result of a disease and often the end of the patient; therefore, the etiological factors responsible are those diseases producing cardiac decompensation. Among those most commonly seen are: coronary blood supply to the myocardium; rheumatic heart caused by rheumatic fever; beri-beri heart; thyrotoxicosis; severe anemia; syphilis; aortic or mitral stenosis; adhesive pericarditis; hypertension, especially the malignant type, and bacterial endocarditis. It might be well to classify all cardiacs as potential cases of congestive failures because anything that diminishes the reserve may precipitate an attack such as the acute respiratory infections, emotional stress, excessive physical exertion, obesity and pregnancy. Statistics show that the majority of patients were past fifty years of age and more prevalent in men than women.

All pathological factors and symptoms must be considered in conjunction with an abnormal cardiovascular system before making a diagnosis of congestive heart failure, but a diagnosis of heart disease can be made by only an examination of the heart. Physiologically the heart is divided into two separate compartments working in unison and expelling an equal amount and volume of blood to maintain the normal venous pressure. Any discrepancy in this function soon creates a vicious circle with many anatomical changes. If this should be on the left side of the heart, regardless of the cause, and the left ventricle expelled only about one fifteenth of a cc. less blood per beat than the right, then the volume of blood and venous pressure in the lungs would soon cause a decreased vital capacity with shortness of breath preceding the appearance of bronchial rales. The heart failing to compensate by auricular or ventricular dilatatation and hypertrophy, the congestion of the lungs produces dyspnea, especially at rest, with Cheyne-Stokes breathing during sleep, also cyanosis, bronchial rales, asthma, cough and prolonged pulmonary circulation time. This, called left-sided failure, is usually due due to hypertension, aortic or coronary diseases and their abnormalities. When this occurs on the right side of the heart, whether from congestion and increased pulmonary pressure following left-sided failure or some abnormal primary condition, the lower extremities and abdominal organs are the first to be affected. There is edema of the ankles which spreads upward until the liver is engorged causing cirrhosis and ascites. Then the kidneys become involved with albuminuria and a markedly decreased quantity of urine voided. As this condition progresses the veins in the neck become distended and the face edematous; also there is often an increase in weight due to the retention of fluids. The patient complains of digestive disturbances, pains in the epigastrium, nervousness, insomnia and constipation before the engorgement extends to the pulmonary system. These patients are rarely seen in the early stages of failure because only the acute emergencies arise from the left side.

The diagnosis of congestive heart failure is often confused with other diseases causing similar manifestations and symptoms, but whether the failure is caused by one or both sides of the heart the most important thing to the patient is an early diagnosis. If a patient is suffering from one or more of the many symptoms previously mentioned the first consideration is whether or not this patient is classed as a potential failure because of a previous cardiac disease and then, regardless of the classification, a complete examination of the heart should be made as an aid in eliminating those diseases causing similar symptoms. Many times it is difficult to distinguish congestive failure from allergic asthma, nephritic edema, varicose veins with edema, enlarged liver due to alcoholic cirrhosis or malignancy with edema and ascites, emphysema, bronchitis, bronchopneumonia and cancer of the lungs. When asthma is seen in a person of middle age and living in the same locality over a period of many years

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with no previous attack it is usually pathognomonic of congestive failure. The remaining diseases with similar symptoms can be eliminated by certain tests, such as in congestive failure the slow velocity of the blood flow, the increased venous pressure and the decreased vital capacity of the lungs, which are normal with the other mentioned diseases and which have certain individual symptoms, just as in nephritic edema where the blood volume remains normal while in cardiac failure it is markedly increased.

The prognosis, after the survival of the primary attack of congestive heart failure, depends upon the coöperation of the patient to determine the expectancy of life. Statistics show the death rate to be greatest within the first five years, and that those suffering from malignant hypertension die earlier than when from other causes. It is a known fact that life can be prolonged many years if a patient is willing to conserve the cardiac reserve by an amputation of the many business and social obligations from the daily routine and to pursue a sedentary mode of living under the constant supervision of a physician.

The treatment of congestive heart failure should be governed by the individual requirements of each case. When there is a left-sided failure causing an acute emergency such as pulmonary edema, cyanosis, rapid thready pulse, moist cold clammy skin and an uncontrollable cough which forces more blood through a very much overloaded pulmonary circuit, then put this patient immediately to bed, in a hospital if possible, with the head of the bed elevated and give morphine with atropine, to retard the extra stimulation through the vagus due to the increased density of the lungs. Next begin continuous inhalation of oxygen and give an ampule of caffeine sodium benzoate. If this is not a case of peripheral shock caused by an acute coronary thrombosis with left-sided failure, the patient should be thoroughly digitalized by being given immediately one half of the maximum dose, which is one cat unit per eight pounds of body weight, after which one half that dose is repeated in eight hours with smaller doses as needed. Many patients are seen in the stage of what might be termed an impending congestive failure with gallop rhythm or pulsus alternans, cough, gastric disturbances and slight albuminuria. The only treatment necessary in these cases is bed rest, salt-free diet and plenty fluids. The care and treatment of the more advanced cases are the problem children of the medical profession because of the great length of time the patient must be in bed, as rest both physical and mental is the most important part of the treatment, and the many new complications ever needing a change in the drugs and routine care. Many of these cases must have extra stimulation in conjunction with digitalis, either coramine, aminophylline or caffeine sodium benzoate, and although morphine is being given at regular intervals it is often necessary to give sodium phenobarbital or some other sedative without the sodium. The mercurial diuretics are also used successfully in many cases. Tobacco in any form should not be used by cardiac patients. All patients should be limited to virtually a salt-free diet containing not over 1 mg. per day because of the osmotic action of the sodium in producing edema, and should the patient be unable to retain food the first few days, due to the congestion of the digestive system, then glucose may be given in small quantities as soon as the pulmonary edema will permit. All food taken by the patient should be so prepared that it will be easily digested and contain not only enough calories, but the proper well-balanced ingredients to support the bodily needs. It has also been demonstrated that additional fluids with the minimum salt diet will reduce the edema. The question of how long a patient should be confined to bed depends upon the individual case and the severity of the circulatory insufficiency. Those with a severe condition must remain in bed for a longer period than those moderately ill but in all cases, this should be about three times the first stage of recovery with the disappearance of all symptoms, and may take eight to twelve weeks before the cardiac reserve will permit the patient to begin sitting up, which should be about fifteen minutes at first then gradually increasing the time until the patient can resume his regular duties.

REPORT OF CASES

Case 1: H. H. McG. White, male, age 65 years, married, occupation planter and president of many civic organizations, entered the Rosedale Bolivar County Hospital March 7, 1946, complaining of being nervous, weak, unable to sleep, abdominal pains and a cough.

Past History: Acute coronary thrombosis Nov. 10, 1942; was treated in a Greenville, Mississippi, hospital until Jan. 15, 1943, when he returned home, and after many months' rest and treatment was able to resume active business duties. The electrocardiogram showed a definite coronary thrombosis (posterior infarct) and coronary sclerosis with myocardial weakening.

Present History: Physical findings and symptoms indicated impending congestive heart failure but, regardless of bed rest in conjunction with the usual treatment, his abdominal distention became much more aggravated and he developed edema of the lungs March 8. From that date until recovery, which was April 3, many changes in the treatment were necessary, including the prophylactic measures against pneumonia and hypoproteinemia by giving penicillin and plasma.

Case 2: Dr. H. D. V. Dentist, male, age 62 years, first treatment Jan. 26, 1943, for congestive heart failure. His past history was negative as to heart disease.

Present History: Physical examination revealed that he had edema of lungs with asthmatic breathing and heart sounds heard posterior to a line from the axilla and in the sixth or seventh interspace. X-ray of chest showed a rather long aorta with heart in the lower part of chest opposite seventh and eighth ribs and slightly posterior. Electrocardiogram was indicative of coronary sclerosis. He was able to resume some of his duties in June, 1943, after the usual treatment, but on Dec. 9, 1944, he once more developed edema of the lungs and expired Dec. 18, 1944.

Case 3: M. O. White, female, age 80 years, single and although a Christian Scientist she called for medical aid Nov. 14, 1946, when suffering from edema of lungs, rapid respiration, cyanosis and cold clammy skin. The diagnosis was congestive heart failure and although in a coma with Cheyne-Stokes respiration for many days the recovery was such that she was able on January 7, 1947, to travel over a hundred miles in an automobile to live with relatives.

These cases presented three causes of myocardial weakness resulting in congestive heart failure; coronary thrombosis, coronary sclerosis and the senile changes. The first case has suffered two mild relapses within the year; the second died in less than two years, and the third has suffered a severe relapse in less than a year, all of which makes a very unfavorable prognosis for the congestive failures.

CONCLUSION

In presenting this paper it was my purpose to adhere to those failures due to myocardial weakness, although there are many types of heart failure, some of which may be associated with congestive heart failure, such as acute coronary occlusion, which should be given an entirely different treatment.

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DISCUSSION

DR. J. G. ARCHER (Greenville)—In reviewing a series of one hundred and fourteen cases of white patients with congestive heart failure treated by us at the King's Daughters Hospital in Greenville during a period of seven years from January 1, 1940, to December 31, 1946, it has been interesting to me to compile the following statistics. I wish it were possible to give the exact duration of the illness in each case and the number of cases still living. This is an impossibility as so many of these patients do not live in Greenville and therefore complete follow-ups have been impossible.

Of the one hundred and fourteen cases 68 were males and 42 were females. The ages ranged from fifteen years to eighty-six years. One hunderd and four in this series were between the ages of 50 and 86 with six past 80 and seventeen in their seventies so there were only ten in the group below 50 years of age.

The majority of the patients in this series were admitted to the hospital only once. Three were admitted five times. One was admitted six times. One was admitted eight times and one was admitted ten times. The stay in the hospital ranged from one day to one hundred and five days but the average stay was about three weeks. Of the one hundred and fourteen cases there were forty deaths. In other words, 34.8 per cent of these cases died in congestive failure.

The duration of illness of this particular group of forty ranged from one month to six years and the number of admissions to the hospital ranged from one to ten times.

Of the series of one hundred and fourteen cases sixty-two had hypertensive cardiovascular disease, twenty had arteriosclerotic heart disease, twelve had coronary thrombosis, eleven were diagnosed myocardial disease and two rheumatic heart disease.

Needless to say all of these patients had the cardinal symptoms as outlined in Dr. Patterson's paper, namely, weakness, shortness of breath, cough, swelling of the feet, ankles and legs, inability to lie flat in bed, etc.

In this series there were six patients who also had diabetes, two tertiary syphilis and one patient who made a miraculous recovery after developing acute congestive failure about one hour after delivery of a normal male baby.

I would like to show the electrocardiographic tracings on each case but time does not permit. However, allow me to say that we have some most interesting tracings showing evidence of coronary thrombosis with anterior and posterior infarcts, complete and incomplete bundle branch block, auricular fibrillation, auricular flutter, advanced myocardial disease and tracings of hypertensive cardiovascular disease.

The conclusions to be drawn from these statistics are: Congestive heart failure is seen more frequently in males than in females. The majority of patients are past fifty years of age. Various types of heart diseases are encountered. Complications are to be expected. The prognosis is indeed grave.

DR. E. R. NOBLES (Rosedale)—There should be no lack of interest among members of the medical profession in heart disease, for not only the internist but the surgeon also must of necessity continue to be alert to its varied manifestations if they are to evaluate the symptoms properly and safeguard the welfare of their patients.

We see it often in all forms and among different classes of patients.

Dr. Patterson has presented to us in a concise manner certain important acts, in the diagnosis and treatment of both the myocardial and coronary types of congestive heart failure, and I desire only to emphasize some diagnostic points he could not cover for lack of time. There are both primary factors and secondary factors to be considered in either of these types of heart failure while acting separately or together may set off a failure. These were brought out in the paper by the essayist.

Coronary failure is always initiated by effort pain in the chest and there are always electrocardiographic changes. The severity of the pain depends upon the extent of the thrombus. The electrocardiographic changes develop accordingly, and may last for weeks, months, or they may even become permanent.

The pain comes on instantaneously usually without any previous warning and is followed by shock, fever, leucocytosis and an increase in sedimentation rate.

Myocardial failure can be superimposed on coronary failure as shown in the first case reported by Dr. Patterson. Just as in this case, a good many years may intervene between the two episodes, and it may of course develop in a manner opposite to this.

Contrary to coronary failure, myocardial failure, although sometimes it may come on rapidly, is never instantaneous and usually develops slowly, insidiously. Usually it begins on the left side, but of course it may begin on the right side, and rarely both sides simultaneously. The heart is always enlarged, there is breathlessness on effort, and oftentimes a light cough at night.

The time between the first two symptoms however may vary from a few hours to a good many years depending upon the cause.

There are other important physical signs within the heart itself but as the disease progresses the lungs become more and more congested until finally we have cyanosis and then failure of the right side.

Now when the right ventrical fails, besides the physical findings within the heart itself, there develops a train of characteristic symptoms which occur almost in sequence.

First, there is enlargement of the liver with stretching of the capsule that frequently causes right upper quadrant abdominal pain on effort which can be quite confusing in old gallbladder infections. This is caused in a manner similar to the pulmonary congestion which brings on shortness of breath in early left ventricular failure. Next in order comes pulsations in the systemic veins, best observed in the jugulars, edema of the feet and legs hydrothorax and ascites. These observations on myocardial failure were especially striking in cases two and three which were reported.

The x-ray and fluoroscope will be helpful in demonstrating the size of the heart especially in the obese. Electrocardiography is helpful but chiefly as an aid in following the course of digitalis therapy. Urine and blood examinations as routine measures have some value. There are other technical tests for heart muscle failure which can be used but are rarely needed.

It should also be remembered that patients with heart muscle failure will show a slight afternoon rise of temperature due to the difficulty of dissipating heat from the endematous tissues with a faulty circulation.

What is the prognosis of congestive heart failure? It is a terminal condition but if recognized early a great deal can be done to add to the comfort of the patient and to prolong his days of usefulness but how long a patient will live after an attack will depend, as a general rule, first upon how well he will coöperate with his medical adviser, and second upon the amount of provocation necessary to cause congestion of the lungs. Specifically, however, the rule is the older the patient, the greater the obesity, the higher the blood-pressure, and the larger the heart, the shorter is his expectancy.

ANYTHING TO STOP HIM

Woodrow Wilson many years ago told me the story of Dr. Andrew D. White's address on Founders Day at the Johns Hopkins University. Aware of Dr. White's tendency to be quite unconscious to the passage of time, President Gilman wrote him that it was usual to limit the addresses to forty minutes. Those who remember the distinguished President of Cornell University will recall that, although he was immaculately garbed and courtly in manner, there was something about him, perhaps his flowing white whiskers, which suggested a prosperous agriculturist.

On this occasion Dr. White had no time to prepare a special address. He had, however, been delivering a course of four lectures at Yale, and felt confident that he could cull something from his manuscript to suit the occasion. He appeared on the platform with all the material of his Yale lectures, a package several inches in depth, and proceeded to read such parts as seemed to him appropriate. His voice was not strong enough to carry beyond the first few rows of seats in the densely packed auditorium. Three-fourths of his audience could hear nothing. But it was a good-natured and patient audience, and any signs of restlessness were carefully repressed out of consideration for the distinguished guest. It sat quietly while the speaker went on and on, past his forty-minute limit, across the hour and well into the next. Finally some wag in the back of the room wrote a message and sent it up. It read, "Farmer White: If you can't turn off the gas, blow it out." The letter was captured before it reached the speaker.

Health Education Activities in the Local Health Program

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HEALTH education is the grease that makes health machinery run smoothly. It is one of the most important parts of all health programs. The major purpose of health education is to provide the means of imparting information to those whose health, welfare, and happiness will be served to a better advantage. It is a way of living—the health of the people. It has been wisely said that doing things for people is often easy, but it is often expensive and of temporary benefit. Showing people how to do things for themselves may take more time but it is relatively inexpensive and its results are lasting. Herein lies the cue for health education. The great hope for public health within budgetary limitations lies in securing more healthful living on the part of the people. If they are to enjoy abundant health, they must first know the facts and act accordingly.

In the early stages of the development of the science of public health administration very little thought was given to health education as a specialty. It was usually a by-product of the services of health department personnel. This was an age of doing things for and to people rather than instructing them in how to solve their own problems. Following this period health education went through a so-called "barnstorming" era. Health information was disseminated widely without purposeful planning and without evaluation of results. That period has now passed. Health education administrators have learned that health education activities can and should be planned to meet the needs of the individual and the community just as other parts of the health program are planned. Let me emphasize here that to accomplish the desired result it is absolutely necessary to have personnel who are well trained and otherwise qualified in health education. There is absolutely no comparison between the work of the trained and the untrained health educator. It is my opinion that a health education progress is not likely to be satisfactory unless it is carried on by personnel well trained in health education, and otherwise qualified for the job.

Experienced and professionally trained health educators have developed excellent specialized programs in schools, health departments, and in private agencies. But the community is a unit and public health activities should involve the development of a unified health education program for the community as a whole.

It is now an evident fact that with the help of specially trained health educators to guide the people in finding and solving their own health problems, there will be a sharing of public health responsibilities in solving health problems. Those who expect the health department to do everything for them, complain of its inadequacies and look for its imperfections.

The public health department knows the health problems of the community, the health facts and the health resources. Therefore, it is in a better position to make a greater contribution through a well organized health education program, than any other community agency.

There was a time when the health officer's responsibilities ended with the operation of the health department. That time has passed. The modern health officer's work is much broader, his responsibilities to the community are more extensive and heavier; and consequently his vision and projection of health activities must be more sighted than in the past. We have learned that the health department alone cannot produce the status of health in the population that we are striving for. The health officer therefore has to see the community health problems and program as a **sum total**, be familiar with all factors in the community that influence the health of the people either adversely or conversely, and is responsible for keeping all health movements moving in the right direction regardless of what organization or individual they originate with and are carried on by and, further, all these efforts and activities must be coördinated by the health officer, or his agent, in order for the community to have an effective health program. In some health jurisdictions it is not possible for the health officer to do this because of other demands that are made on his time by established public health practices. The modern, trained, health educator can do this for him, under his direction, in a most effective manner.

Regardless of adequate programs of sanitation, communicable disease control and so on, the community cannot achieve its optimal health without a thorough going organized program of health education as the foundation for its future maintenance and growth. Such a program to meet adequately the needs of the people should eventually touch the remotest segment of the community in accordance with its nature and needs. It should deal intelligently with existing local problems, distributing emphasis and efforts according to importance and demand. At the local level, this means health department guidance, and leadership, through over-all joint planning. It means well planned, functional programs in the school systems relating to practical health needs of the school children and the community. It means planned in-service training for professional as well as lay groups. It means a coordination of efforts in the field of education, in the field of health and existing community organized groups.

The health education programs that are being promoted by our State Board of Health and Education should not be confused with many short-lived propaganda health programs and spasmodic campaigns, with which we are familiar. These programs serve only as "attention getters" and are not health education in its truest sense. They do not entail any of the preliminary study nor the follow up, necessary to reach the desired goals in public health. The present health education programs are based on the short range and long range objectives. Through the short range programs we are able to meet the urgent needs as they arise and to stimulate interest through a feeling of accomplishment on the part of the public. The long range program projects into the future, through which we view objectively the public health of the community—it is the means of reaching the end product, that of an awakened community where every individual will recognize and assume some responsibility for his own personal health needs as well as those of his community—with adequate facilities present to prevent and control disease, centered around a health department that constantly guards the health of its people.

Health departments are the cornerstones in the structure of an ecomomy which proposes to eliminate want and fear and promote the health of its citizenry. Then, whose job is education? Everyone connected with the publice must be concerned with the fact that opinions and attitudes are formed through these contacts and that they win or lose respect for the organization. Through educational measures, the entire personnel can more intelligently apply their efforts to the attainment of desired ends. Therefore, each staff member must do a certain amount of education. But that old adage, "When a thing becomes everybody's business, it becomes nobody's business" helps us to realize that we have done a great many things for people and to people largely without their knowing why and how they were done. With the services of trained health educators, we can take people into our confidence and they in turn will be more able to help themselves.

Health education activities should coördinate and supplement all health services in the area and should replace none. Program planning is the fundamental background for any education activities for the purpose of attacking the health problems in the local area. Based on the principles of democracy, it must be, "of the people, by the people, and for the people." Therefore, there is no definite set pattern. It has been necessary in some instances to have a central planning committee to assist with determining the methods of attack and the problems to be studied. Such a committee would be representative of the community organizations and lay leaders interested in health. On the other hand, many communities offer well organized groups that supply excellent channels for planned health education programs. In either case, the progress to be carried out, must be planned to meet the real need of the community through use of its own resources to a large extent.

There are certain functions that form an organized program of health education activities in any area; they may include some or all of the functions, which represent a fairly adequate health education program. Among these activities:

1. Survey and appraisal of community resources
   a. Study needs and problems and determine health problems to be solved, at least in part by education.

b. Develop a program of health education of suitable scope with activities to meet adequately the needs of the area served.

2. Assist the community in finding and solving its own health problems.

3. There must be coördination and coöperation of agencies within the area both official and non-official, thus preventing overlapping of efforts extending health education.

4. Gives aid in planning, developing and conducting in-service and pre-service training programs. May include:

a. Professional service
b. Health and school personnel
c. Field training supervision in health education activities
d. Health education workshops institutes, conferences, etc.
e. Staff conferences

In-service training is necessary in any growing program. This can partly be provided for through staff conferences. It is recognized that our colleges must plan to give more adequate training to teachers so that they can understand how children grow and develop. Teachers must know what the health implications are. Until this can be done, in-service training will suffice, and will help the teacher to find her place in community health education. There is also need for **community** in-service training to develop right attitudes on the part of adults so that teachers and health workers may bring about the desired changes necessary for a successful health program. One must be objective about his community, if desired ends are reached.

5. Provides consultation and guidance for groups interested in developing and improving health education activities. Examples. a) Civic groups, b) Home demonstration clubs, c) youth groups—Scouts, etc., d) church groups.

6. Provides and assists with study groups. Examples: a) communicable disease control, b) foodhandlers, c) child care and mother's classes, d) nutrition, e) specific diseases etc., f) teacher groups.

7. Works toward the improvement of the quality of the health education of the school child. Example: a) aid in program or curricular planning, b) teacher conferences, guidance, program planning, c) educational promotion for better lunch programs, d) dental education, e) educational activities relating to pre-school child. "Come let us plan and work together" should be the motivating spirit of school and health authorities. Only when we have the coöperative efforts and interest of the parent, the school, and health personnel can we hope to see healthier boys and girls. Both the health **experiences** and instruction of the child in school and out should be sound and constructive.

8. Organizes and operates services on source materials for public use. Example: a) films, b) literature for distribution c) bibliographies, d) health library.

9. Prepares, selects and distributes health education materials. Example: a) reports, quarterly, annual, etc. b) visual aid—motion pictures, graphic materials, posters, fliers. c) publicity—news releases, feature articles, etc. d) specific campaigns, exhibits and programs.

10. Include assistance in organizing and conducting a) speakers bureau, b) community meetings, conferences, institutes, etc., c) radio programs.

There are some reasonable claims for health education, however, education has no "yardstick." These claims are often confused, and the evidence is always fairly intangible, but we are justified in our assumption that through health education the public may become better informed.

1. Information is the best method of attack as to public health problems, its resources, its yearly accomplishments in terms of activities, its present and future needs, its past accomplishments.

2. Makes for better understanding among agencies, encourages coöperative working together and coördinates their activities.

3. Creates good public relations.

4. Makes possible the use of all available local and state resources.

5. Meets a real, definite need.

6. It interprets the service program to the public in their own terminology.

7. The health educator is the vanguard of the advancing public health movement.

The Differential Diagnosis and Treatment of Undulant Fever

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UNDULANT FEVER, probably more commonly spoken of as brucellosis, recently has been receiving increased attention as a disease of widespread prevalence with a much higher incidence than has been realized. This is reflected by the number of cases reported to the United States Public Health Service revealed in an article by Stewart which states, "In the United States in 1926 only forty-six cases were reported; by 1930 the number had increased to 1,453; and in 1937, 2,497 cases were officially reported to the United States Public Health Service." Concerning the incidence of undulant fever, Staub states as follows: "A very conservative estimate concedes the prevalence of brucellosis in from ten to fifteen per cent of the American population These cases are perhaps mainly ambulatory and without due knowledge of their existing infection, probably only one per cent enjoying recognition and treatment for this most protean of maladies." No doubt, most of us have seen and are still seeing patients suffering with undulant fever in which instances the diagnosis has not been made.

A review of the pathology of the disease reveals that the Brucella organisms have been isolated from practically all the tissues of the body, including the tonsils, and to some extent because of the scattered involvement of tissues explains the reason that probably no other disease enjoys more protean manifestations than does undulant fever.

Since the clinical picture of the acute form of the disease differs so in symptoms from that of the chronic form, a separate consideration will be made of the two.

The onset of the acute form of the disease may not be unlike that of influenza or of a general infection, being ushered in with a slowly rising type of fever, malaise, weakness, constipation, muscular aches and pains, anorexia, epistaxis, or respiratory involvement with a severe cough. Painful swelling of the testes has been described, as well as epididymitis, prostatitis, and seminal vesiculitis. As the disease progresses, the afternoon fever may become higher, with profuse perspiration as the fever abates. However, there may be an intermittent and remittent fever. Loss of weight is a very common feature, more marked in those with high fever and profuse sweats. There may be a peripheral lymphadenopathy, enlargement of the spleen, and a leukopenia with a relative lymphocytosis. Diseases most commonly considered to be differentiated from the acute form include tuberculosis, pneumonia, malaria, typhoid, tularemia, influenza, virus infections, bacterial endocarditis, typhus fever, septicemia, and various pyogenic infections.

In considering the chronic form of undulant fever, it should first be said that it is almost impossible to enumerate the varied and sundry symptoms of the disease. This is the group most commonly seen by the physician and many of whom are walking around misdiagnosed as neurotics, chronic fatigues, and nervous exhaustives. It is the chronic form with which the physician's diagnositc ability is often taxed to limit. Simpson very ably states it as follows: "A recitation of all the symptoms which have been ascribed to chronic brucellosis would serve only to heighten the confusion which as yet surrounds this baffling phase of the disease. In general it may be stated that the three cardinal features of most cases of chronic brucellosis are weakness, low grade fever and lack of objective findings." The patient may relate of recurring periods of a few days to weeks during which time the symptoms of fever, anorexia, weakness, headache, constipation, muscular pains, irritability, or mental depression may be present. Frequently the patient presenting himself with chronic brucellosis gives a history of having "made the rounds" to various physicians and after relating his story of a vague syndrone of symptoms, has been treated as a neurotic when physical examination revealed nothing significant. There is evidence to show that the chronic disease may follow the acute stage.

We have had occasion to observe four patients with chronic brucellosis during the past year. Two patients presented themselves be-

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cause of extreme weakness, one because of headache, and one because of fever and weakness.

Brucellosis should be considered in any vague, febrile condition where the diagnostic requisites of some other disorder are not convincingly present. Diseases most usually to be considered as stimulating chronic undulant fever include tuberculosis, malaria, typhoid, influenza, cardiac disease, arthritis, anemias, rheumatic fever, and sub-acute bacterial endocarditis. If brucellosis will always be kept in mind while studying a patient with the varied symptoms as related above, the disease will be discovered more frequently.

In reviewing the work of Simpson and the work of Huddleson, it is obviously hazardous to make a diagnosis of undulant fever on the clinical picture alone. Laboratory tests must be resorted to in establishing the diagnosis. There are four laboratory tests more commonly used: 1) blood culture, 2) the agglutination test, 3) the intradermal test or allergic test. and 4) phagocytic index or opsonic test An absolute diagnosis is possible only with a positive blood culture. However, very frequently, a positive culture cannot be obtained or facilities for such a test are not available in general practice, the latter being true also for the opsonic test. However, the two remaining tests, the agglutination test and the intradermal test, can be carried out very satisfactorily by the physician in general practice and the results of such correlated with the clinical findings and other laboratory work to serve at arriving at a diagnosis of undulant fever. The agglutination test is accomplished by withdrawing 4 to 5 cc. of blood in a Keidel tube and forwarding same to laboratory adapted to conduct such test. In Mississippi such facilities are available to all physicians at the laboratory of the State Board of Health. The agglutination test is often negative in acute brucellosis, and probably in the majority of the cases of chronic brucellosis the same is true. This fact alone may account for failure to make a diagnosis or to be misled. Harris has emphasized this fact by stating, "Most unfortunately it is almost standard practice to accept one or more negative blood agglutination tests as signifying the absence of Brucella infection." Most investigators agree that the presence of agglutinins in a titer of 1:80 or higher is presumptive evidence of Brucella infection when occurring in a patient whose clinical findings are comparable to those of undulant fever.

The intradermal test is easily carried out and may be accomplished by injecting 0.1 cc. of brucellergen intracutaneously in the flexor surface of the forearm. It is fairly reliable and should be welcomed by the busy practitioner. The test should be read in forty-eight hours after injection. Edema and erythema of two centimeters or more is considered a positive test and indicates past or present infection. Recent studie show that brucellergen fails to elicit a positive reaction in about five per cent of actively infected individuals. Brucellergen may be obtained from the Central Brucella Laboratory, Michigan State College, East Lansing, Michigan.

After reviewing the therapy used by various investigators it can safely be said that at the present time there is no definite, unchallenged plan of treatment. Hall and Spinks are definitely convinced that the sulfonamides are effective in the acute infections due to Brucella abortus and in those patients who have a good immune response as reflected in the agglutination titre.

All apparently agree that penicillin is of no value while there seems to be some confusion as to the value of streptomycin.

Huddleson advocates the use of brucellin, a culture filtrate without bacterial cells, in both the acute and chronic forms of the disease and states that data show that this agent, when properly used, shortens the duration of the illness in 82 per cent of cases to less than twenty days from the time of the first injection.

Four cases of chronic brucellosis have been treated by the writers with brucellin during the past year. All four responded very favorably, two having been entirely free from symptoms of the disease for seven to eight months, the other being definitely improved and grateful for the treatment.

General supportive measures should also be instituted, consisting of bed rest during the acute stage, mild sedatives for restlessness, large doses of vitamin B, as well as a well nourishing diet.

Discussion of the treatment of the disease would not be complete without making mention of steps in regard to prophylaxis. There are three measures which if accomplished would go a great distance in stamping out a disease which may become public health problem Number 1 in the not too distant future: 1) pasteurization of all milk, 2) eradication of the disease in domestic animals, and 3) public health education of the danger in consuming raw dairy products.

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Report of a Case of Very large Adenomatous Goiter*

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MRS. J. E. S., AGE 51, white, first came to my office March 12, 1946, for removal of a large "growth" in her neck, in the region of the thyroid gland which was pressing on her "wind-pipe," and causing difficult breathing, which was so distressing at times that she feared that it might cut off her breath entirely. Patient stated that she first noticed the enlargement in her neck about twenty-five years ago and that it had gradually grown to its present enormous size without pain. The right side was considerably larger than the left. The growth, although prominent, conspicuous and unsightly had not produced any disturbing symptoms until about three months before that time, when she began having attacks of suffocation. These have worsened and caused her to seek relief. She stated that she had had no previous treatment for this condition, and that she was healthy and strong otherwise.

Past History—Patient had had the usual childhood diseases. She stated that she was the mother of twelve children and had had two miscarriages. Her menstruation began at eleven years of age. It was always regular and normal, and she passed the menopause at the age of forty-five without symptoms. She had had no operations and no injuries.

Family History—Irrevalent.

Physical examination revealed a white female, apparently about 50 years of age, weighing 162 pounds. On appearance she was a rustic type of individual, but with an anxious facial expression. Skin was florid. No cyanosis. Temperature, normal. Pulse, 82, regular. Respiration, 20. Blood pressure, 155/85 on November 12, 1946, 135/85 on January 26, 1947. Eyes appeared normal. No exophthalmos. Severe gingivitis and many infected teeth were present. She also had moderate chronic tonsillitis. The thyroid gland presented a huge asymmetrical nodular enlargement which was more prominent on the right side. Pressure on the trachea was evident because a laryngeal stridor could easily be heard during forced breathing with her mouth open. The gland was rather firm in consistence. Chest, normal size and expansion. It was hyperresonant throughout. Breath sounds, loud. No rales. Breasts, normal. No tumors. Heart, normal in size. Rate, normal and regular. Heart sounds, clear and of good muscle tone. No murmurs heard. Abdomen, large and flaccid. Many striae present. No tenderness or enlargements. Vaginal examination revealed second degree laceration and relaxation of the perineum with rectocele and cystocele. Stellat laceration of the cervix with cystic cervicitis. Second degree prolapse of the uterus. Tubo-ovarian regions, normal. Ano-rectal region, normal. Extremities, normal. No tremor.

Laboratory Findings—Urinalysis, normal. Blood, hemoglobin, 85 per cent; erythrocytes, 4,600,000; leucocytes, 7.500; small lymphocytes, 30 per cent; eosinophiles, 3 per cent; neutrophiles, 67 per cent; Wassermann test, negative. Basal metabolic rate, minus 6.

Surgical removal of the adenomatous goiter was not only considered the treatment of choice but was imperative because the tracheal pressure was causing such difficult respiration. However, the operation was deferred in order to clear up the gingivitis and have the infected teeth extracted first. This was done. Twelve infected teeth were extracted. Her tonsils were also treated repeatedly. She was given sulfonamides and multiple vitamins.

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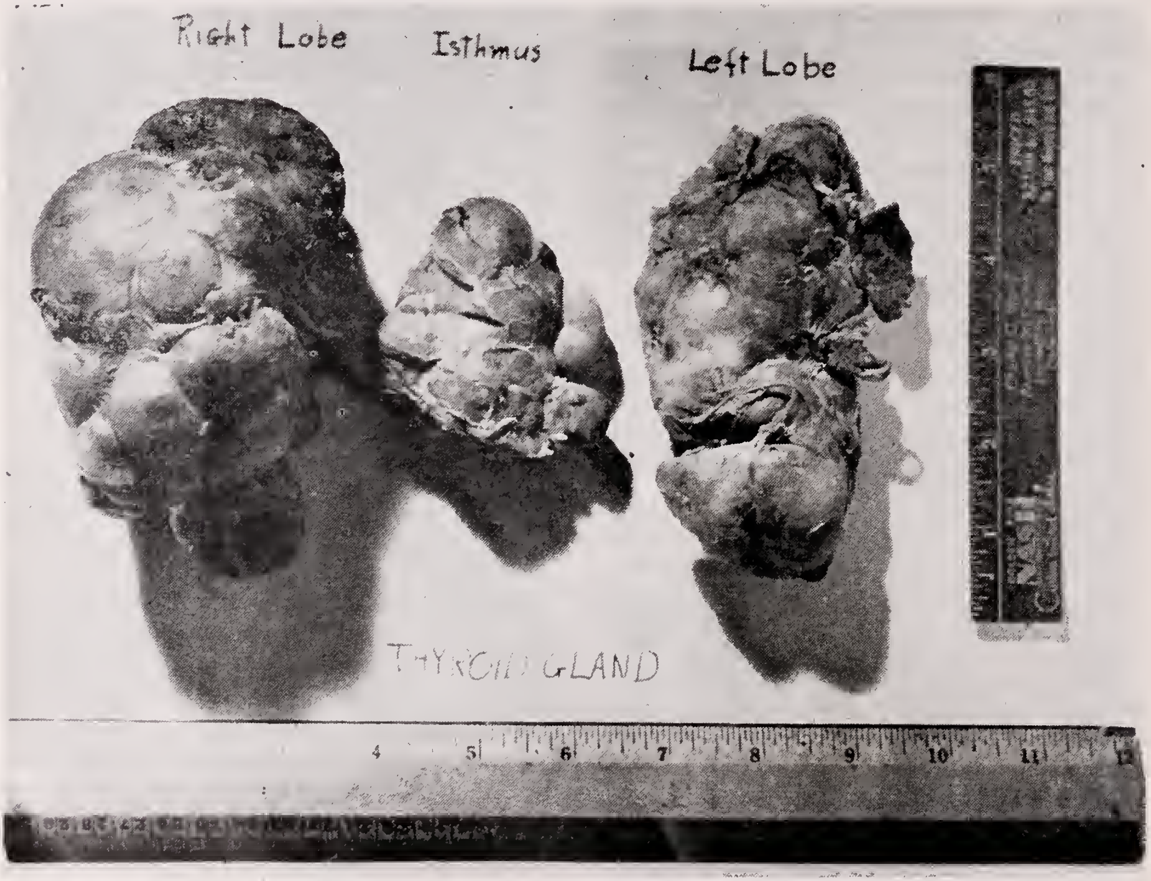
*Read before the staff meeting of the South Mississippi Infirmary, Hattiesburg, Miss., April 24, 1947.

The patient was admitted to the South Mississippi Infirmary an January 26, 1947, and subtotal thyroidectomy performed on January 27, 1947, under local and general anesthesia. A collar incision about 2½ inches above the suprasternal notch was made through skin, superficial fascia and platysma muscle, which were dissected up as a flap to the thyroid notch. The lower flap was freed to the supraspinal notch. A long midline vertical incision was made through the deep cervical fascia exposing the isthmus of the thyroid gland. The infrahyoid muscles were separated from the thyroid lobes by blunt dissection and divided transversely, high on each side. By retracting the muscles laterally and upward and the right lobe downward and inward, branches of the superior thyroid vessels were exposed by blunt dissection. These vessels were divided between clamps and ligated. The right upper pole of the thyroid gland was drawn down and as other branches of the superior thyroid vessels were exposed, they were clamped, cut, and ligated and cut as well as the lateral branches of the inferior thyroid vessels. The lateral portion and lower pole were freed by blunt dissection and the right lobe lifted. The isthmus was then divided vertically and the right half of the isthmus was removed with the right lobe by cutting across the right lobe from the trachea, leaving a thin portion attached to the posterior capsule. In like manner, the left lobe and left half of the isthmus were removed. The divided muscles were sutured with mattress sutures, interrupted. Then the deep cervical fascia was sutured together in the midline. The platysma muscle and superficial fascia were sutured with No. 0 plain catgut and the skin closed with dermis. A split rubber tube drain was left in and brought out through a stab wound below the incision in the midline. Patient stood the operation fairly well and was awake before leaving the operation room.



Gross Findings—The portion of the gland removed weighed 17½ ounces. (See Fig. No. 1). There were several large nodules which were only partially encapsulated. The largest nodule was on the right side. The tissue was moderately firm in consistency and amber in color. The vessels were markedly hypertrophied.

Microscopic Findings—"Hypoplastic goiter showing evidence of recent hyperplasia. There are varying phases of activity, but for the most part the acini are filled with deep staining colloid material, and are lined with low columnar or cuboidal epithelium. There is considerable variation in size of the acini. In some areas the colloid is less dense and shows vasculation adjacent to the epithelium, and there are epithelial spurs extending into the acinar spaces. The stroma is scant and shows but little vascularity. In some areas the stroma is heavily infiltrated with lymphocytes." (The microscopic description is by Dr. R. M. Moore, Vicksburg, Miss.)

Progress—The immediate postoperative condition was good. Highest temperature of 103 degrees was reached at the end of 48 hours and gradually returned to normal at the end of the sixth day. Her pulse averaged 110 for the first three days and then gradually returned to 80. Drainage tube was removed on the fourth postoperative day. Skin sutures removed on the fifth postoperative day. Wound healed primarily. Penicillin, 40,000 units was given intramuscularly every three hours for prophylaxis. A husky voice was present after the operation but this was practically clear when she left the Infirmary and has improved somewhat since. No tetany. Patient was allowed to walk on the fifth postoperative day and discharged from the Infirmary on the seventh day. She came to my office once a week after that and was dismissed as cured on March 10, 1947, or six weeks after the operation.

Comment—This case is interesting chiefly because of the large size of the gland. According to Pemberton, the normal thyroid gland averages 30 grams in weight! On this basis, the gland in this case was at least 18 times larger than normal. It is known that adenomatous goiters are noted for their large size and according to Reinhoff the gland may vary from three or four times its normal size to an enormous growth hanging down to the waist[2]. Certainly this case is not the largest, according to the literature, but it is one of the largest that I have ever encountered.

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GENERAL PRACTITIONER'S MEDAL

The trustees of the American Medical Association have announced their intention to give annually a General Practitioner's Award—the conditions of which are:

1. No officer, present or past of the American Medical Association is eligible for this award.
2. No member of the House of Delegates of the American Medical Association is to be considered.
3. The recipient must be a man doing general practice:
   a. His work must be outstanding in his community.
   b. Service should be of long duration.
4. Must be nominated by some society, or lay organization, or even a single person can name this candidate.
5. Locally
   a. The medical society should choose their candidate from their number.
   b. Have the delegate from that society present his name with a short biography of the candidate to the house of delegates of the Mississippi State Medical Association.
6. Of the names thus presented, one will be chosen.
   d. This selected one's name will be forwarded to the secretary of the American Medical Association.
6. Nationally
   a. The secretary of the American Medical Association will turn this candidate over to the Committee on General Practice of the American Medical Association.
   b. This committee will select five from the list and submit them to the trustees of the American Medical Association.
   c. The trustees then will choose three out of the five and present these three names to the house of delegates of the American Medical Association for their choice of one.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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FINE MEETING

The Mid-South Postgraduate Medical Assembly held its annual session in Memphis at the Peabody Hotel February 10, 11, 12, 13. The attendance was a record breaker, about twelve hundred in all with 685 practicing physicians. On the death of President J. C. Pennington, Dr. Max Lindsay of Spring City, Tennessee, became acting president. He handled the meeting in fine order assisted ably by Vice-Presidents E. C. Parker of Gulfport and H. T. Smith of McGehee, Arkansas. The secretaryship, left vacant by the death of Dr. A. F. Cooper, who served well and long, was taken up by Dr. H. B. Gotten of Memphis who was serving as assistant. He carried through with ease and ability. The exhibitors broke the record also, the number being 143. Some had to be placed on the first floor of the hotel.

The scientific papers at this meeting were better than usual. The papers as a rule were more practical, well written, and ably presented.

At the business session the following incoming officers were elected to pilot the assembly: Dr. Frank M. Acree of Greenville, Miss., president; Dr. Hoyt R. Allen of Little Rock, Ark., president-elect; Dr. Henry B. Gotten, Memphis, Tenn., secretary; and the three vice-presidents, Dr. J. S. Sanders, Leland, Miss., Dr. Robert Hood, Russellville, Ark., and Dr. H. L. Armstrong, Somerville, Tenn.

§

Dr. Robert B. McLean of Jackson has charge of our scientific exhibits for the State Medical Association which holds its annual session this year in Jackson on May 11, 12, and 13. He is giving his time and effort to make the exhibits a success. Scientific exhibits can be of untold value in conveying important information. Dr. McLean must know about your exhibit by the first of April. If you plan to have one please let him know at your earliest convenience.

Dr. Dudley Jones of Jackson is in charge of the commercial exhibits. He does this job in fine order. The commercial exhibitors have

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service as their aim and much can be learned from them and in addition they aid in financing the expense of the meeting. Let us give due consideration to all exhibitors.

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From many sections of the United States complaints have come lately that persons who have called physicians late at night have been unable to secure attendance from either those whom they considered their family physicians or from specialists or, indeed, from any physician.

In one city recently a child was struck by an automobile and sustained a fracture. The accident occurred on a corner next to a great building in which were housed many physicians. Some one from the street who had seen the accident attempted to secure the services of a half dozen physicians who were at the time in their offices, yet all refused to respond to the call, offering as excuses the specialties which they practiced or the fact that they were at the moment engaged with a patient. Public opinion condemned them unequivocally; their failure to respond greatly injured the good will of the public for the medical profession in the community as a whole.

When the pressure on the medical profession becomes severe, as it is now in this postwar period, demands are likely to press too heavily on the available service. Organization of the medical profession to meet the emergency needs was a conspicuous part of the solution of wartime problems. County medical societies in some areas maintain a physicians' telephone exchange which takes the responsibility for locating physicians if response is not made to the ringing of the telephone in the home or in the office. For meeting emergencies the exchange maintains a list of physicians who are willing to make calls at night. Information is also maintained as to physicians who are available during the day or night and the offices in which they are available. Many of the night calls come from older physicians who request the bureau to send young practitioners on emergency calls.

Actually comparatively few "night calls" are so urgent that harm would result from postponing response until morning. Nevertheless, the patient who suffers pain or the mother who is frightened over a condition in her child that she does not understand is little interested in explanations as to the percentage of emergency calls that are not really emergencies.

Intemperate discussion of this subject has caused some publications to assert that a government medical service would prevent such incidents. These statements are made without knowledge of what actually occurs when government agencies take over medical practice. When the physician is placed on a nonprofessional basis, he is likely to act like other nonprofessional employees.

Any human being who is fatigued or exhausted by long hours of work under conditions of stress and great responsibility will eventually reach a point at which response is difficult. People should understand that the physicians of the United States carried a tremendous burden during the war. The removal of one third of the medical profession from private practice placed enormous stress on those who remained at home. The young men who returned from the war have to work hard to bring themselves up-to-date and they have the same problems of housing, difficulties of securing equipment and making postwar adjustments that occur in every other occupation. These adjustments will be made gradually. Nothing is to be gained by unwarranted acrimonious and intemperate charges of failure to meet what seem to be absolute obligations.

—*Journal of the A.M.A.*

It has been apparent for several years that there is a growing shortage of doctors and this shortage is becoming more acute. There are several reasons for this. One is the increasing length of time and the increased expense of acquiring the right to practice medicine. Another is the trend of specialization. It is very seldom that a young doctor is willing to prepare himself for the general practice and to undergo the hardships of a rural work where the need for real doctors is greatest. It requires more preparation, more study and more intelligence to equip oneself for general medicine than it does for a specialty. It is perfectly natural for people to set themselves against the least resistance. Again the specialties are more spectacular and far more remunerative than general medicine. Many years ago, while on my way to a medical meeting, a friend introduced me to his bride who was going with him to this meeting. He gave me his seat by his bride and retired to the smoker. During the course of our long conversation I shocked the lady by saying almost anyone could become a surgeon but that very few men could ever fit themselves for general practice. She said, "Oh you surprise me. I thought that only my husband and a few others could become surgeons." I saw that I had said too much. When her husband returned she told him, with apparent indignation, what I had said. He, being a very intelligent and level-headed man, said "I guess, on the whole, he is right. I think the greatest reason, is the fact that our young men are not given just the teaching that they deserve, and should get. Their teachers are specialists, as a rule, and they see medicine through the eyes of specialists. We need and must have a few specialists but we need a great many general medicine men. I remember an incident that occurred during my service as a member of the licensing board of our state. A young man applied for license but was rejected. No member of our board knew this young man. He took his medicine and did not complain or protest. Later one of the applicants that I knew asked me why we did not license his teacher. He went further and said he believed his teacher was trying to put a fraud over on us, that he believed that he was taking the examination for someone who doubted his ability to make the passing grade. It looked reasonable to me, so I visited this teacher in his home city and told him frankly that he was under suspicion and investigation. He declared that he was innocent and invited investigation. He gave me a sample of his handwriting which was compared with the papers in file with our board. We found that he had told the truth when he said that he simply could not make the grade. He said that he had selected his specialty before he began the study of medicine, that he had no ambition or desire to learn medicine, that he had put all his time and study on his favored branch. He said further that he entered a partnership with a kinsman who, like himself, knew no medicine. No man, under such circumstances, is qualified to teach or practice a specialty. Again, a man who enters medicine with the thought that medicine is a business whereby wealth may be quickly and easily acquired with no thought that it is an opportunity to render faithful service to his fellowman is not entitled to the confidence of the public or the respect of his fellow-doctors. To be reckoned a surgeon one needs only to have a good working knowledge of human anatomy, to be dexterous with his hands, to have steady nerves, good eyesight and plenty of confidence in himself. Then display a few shining instruments and watch the suckers stream in and the bank account grow!

News and Comment

NEW PRESIDENT-ELECT

Dr. Hoyt R. Allen, 826 Donaghey Building, Little Rock, Arkansas, was elected President-Elect of the Mid-South Postgraduate Medical Assembly at its fifty-ninth annual session in Memphis, Tennessee, February 10-13. The presidents alternate between the three original states, Arkansas, Mississippi and Tennessee. Dr. Allen will be installed president at the close of the 1949 session and will preside at the 1950 session.

Dr. Allen limits his practice to proctology. He is secretary of the Section on Proctology of the Southern Medical Association and is active in his state society and in national societies. He is an Associate Professor of Proctologic Surgery in the University of Arkansas School of Medicine, Little Rock.

STATE MEDICAL MEETING

At the coming meeting of the Mississippi State Medical Society in Jackson on May 11, 12, and 13, the Scientific Exhibits Committee is hoping to have the members of the society supply the great majority of the exhibits. Anyone having an exhibit for presentation is urged to make arrangements for space at the earliest date possible.

Out-of-state individuals and clinics are invited to make presentations also.

There will be facilities for presenting motion pictures.

Those interested should communicate with the Chairman of the Scientific Exhibits Committee, Dr. Robert B. McLean, 910 North State Street, Jackson, Miss.

The Hobbies Committee has made arrangements for three events during the convention. It is requested that each man who expects to participate, please write the man in charge of the event whose name appears below:

GOLF TOURNAMENT: A one-day golf tournament will be held Tuesday, May 11, 1948, at one of the country clubs in Jackson. A moderate green fee will be charged each entrant. Necessarily, each man must furnish his own golf clubs and equipment. A suitable trophy will be awarded the winners. Dr. W. E. Noblin, 515 Standard Life Building, Jackson 27, Mississippi, is in charge of this tournament.

SKEET TOURNAMENT: A skeet tournament will be held the same afternoon, Tuesday, May 11, 1948, at the Capitol Gun Club. Guns will be furnished, but participants will be expected to pay for 50 rounds of ammunition (Approximately $4.00). Trophies will be awarded the winners. Dr. Walter H. Simmons, Jr., 421 Standard Life Building, Jackson 27, Mississippi, is in charge of this tournament.

HOBBIES DISPLAY: Space has been allotted for the displaying of photographs, paintings, sculptures, etc., which have been done by Mississippi physicians. It is important that notice be given as far in advance as possible so that the exact amount of needed space may be provided. All doctors having such exhibits are urged to display them at the convention. Please write Dr. Walter H. Simmons, Jr., 421 Standard Life Building, Jackson, Miss.

On Tuesday, May 11, at 6:15 P.M., there will be an alumni banquet. Reservation can be made with Dr. J. Gordon Dees at 777 N. State Street, Jackson, Miss.

On Wednesday, May 12, at 6:30 P.M., there will be a cocktail party in the Rose Room of the Heidelberg Hotel for all physicians and their wives, through the courtesy of VanPelt and Brown, Inc., Pharmaceutical Chemists of Richmond, Virginia, which is to be followed at 7:30 P.M., by a banquet and entertainment in the Victory Room of the Heidelberg Hotel for all physicians and their wives.

The following facts from the *Survey Bulletin* will be of interest to many. Our hospital population has about doubled within the last decade. Last year gave us the highest birth rate in the history of our country. Two thirds of our babies were born in hospitals. This held good we think even in the rural counties.

Taking care of the wives of soldiers from private up to sergeant, marked a new era for the rural sections in Mississippi. It gave the country doctor more for his services than he had been getting, taught the country mother that it was best to go to the hospital for her delivery if at all possible. We can see now plainer than ever that the small hospital is going to be the cornerstone of better medical service to the people in the rural districts where patients have had inadequate service.

More babies were born in the United States in 1947 than any year in the nation's history. The estimate for 1947 places the live births at 3,720,000, an increase of 431,000 over 1946.

The death rate for infants under twelve months hit a new low, only 32.6 per 1,000 live births, compared with a rate of 35.1 in 1936.

The Security Agency estimated that deaths at all ages for 1947 reached 1,448,000, 10.1 per 1,000 population.

The American Hospital Association reports that 15,153,452 persons were admitted to U.S. hospitals in 1947, compared with 8,646,885 in 1936. Two babies out of every three were born in hospitals in 1947. The number of hospital beds has increased from 1,096,721 in 1936 to 1,468,714 in 1946.

It is now estimated that three per cent of the people of our country suffer from alcoholism. It is concluded that they are sick people and can be cured. It is said that they make good workers when cured. Alcoholism is costing industry in this country more than a billion dollars per year. Every industry has its alcoholics. Much money and time and thought are being given to their treatment. This is right, but what is overlooked by all people, the medical profession included, is that prevention is the all-important thing. The majority of doctors want to drink wet and practice dry. The problem is very simple if one and all people would quit using alcohol as a beverage. Very little if any good comes from it. Neither the individual nor the world is made better by the consumption of alcohol as a beverage. The best known medical men of the world, the Mayos, took this view. We are sure the alcoholic should be treated as a sick person, but prevention should be preached by the medical profession. Alcohol as a beverage is more dangerous to this country even now than the Communist. The medical profession has a duty along this line if it only had the vision to see and the courage to execute.

THE LOUISIANA-MISSISSIPPI OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY

The annual meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society, will be held at the St. Charles Hotel in New Orleans on Saturday, April 17, 1948. Dr. Edley H. Jones, Vicksburg, is the secretary. Dr. Noel T. Simmonds, Alexandria, La., is president.

Among the essayists will be Dr. Thomas C. Galloway, Evanston, Ill.; Dr. Walter Stevenson, Quincy, Ill.; Dr. J. R. Lindsay, Chicago, Ill.

ACCP EXAMINATIONS

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for fellowship will be held at Chicago, June 17, 1948. Candidates should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

CANCER MEETINGS

District meetings of the American Cancer Society, Mississippi Division, will be held at the following places on the dates given:

University of Mississippi, March 4, 1948, 10:30 a.m.; Vicksburg, Mississippi. March 10, 1948, 10:30 a.m., Vicksburg Hotel; Hattiesburg, Mississippi, March 11, 1948, 10:30 a.m.; Cleveland, Mississippi, April 8, 1948, 10:30 a.m.

Dr. Malcolm Dockery from the Mayo Clinic, and Dr. Harold L. Stewart, of Bethesda, Maryland, Dr. H. M. Graning, U. S. Public Health Service, and others are among the outstanding speakers to appear on these programs.

HALF-CENTURY FAITHFULS

Dr. William Lane Howard has been attending the Mid-South Postgraduate Medical Assembly for fifty-three years without missing a session.

Dr. Howard, who practiced in Memphis thirty-one years and is now a doctor at Western State Hospital, Bolivar, Tenn., attended his first meeting back in 1895 when the assembly was known as the Tri-State Medical Association.

Another veteran is Dr. William Britt Burns, Memphis surgeon, who has been attending the sessions since 1898. Dr. Burns said he and the late Dr. W. W. Taylor were the two last Memphis doctors to give up the horse and buggy and change to automobiles.

Dr. Burns was president of Memphis and Shelby County Medical Society in 1917 and is a past president of the state society. He has been practicing 56 years. Both Dr. Burns and Dr. Howard are past state vice-presidents of the old Tri-State Association.

Another veteran is Dr. A. H. Montgomery of Burnsville, Miss., a real country doctor who has been coming to the Assembly since he was at Memphis Hospital Medical College in 1910. He started off riding a horse to see his rural patients, did not get a car until 1913.

Dr. Montgomery has delivered 4667 babies, many by lamplight or almost in the dark. He says he seldom got to give country mothers prenatal care in the old days.

Two others, both past-presidents of the Mid-South Postgraduate Medical Assembly, are Dr. A. C. Cox of Helena, Ark., and Dr. Jere Crook of Jackson, Tenn. Both these young men are endowed with a generous share of optimism, enthusiasm and hearty good wiil. Dr. Crook admits that he'd rather toast the fellows who've past the half century mark in service than share honors.

Dr. J. Lucius McGehee of Memphis is now a member of our editorial board for the Mid-South Postgraduate Medical Assembly. He succeeds the late Dr. E. M. Holder, so well and so favorably known in the Mid-South. Dr. McGehee is a very versatile man, broadly schooled in medical knowledge, profound in surgical wisdom, and in surgery in the mid-South he is a cornerstone. We are sure our readers will profit by his able pen.

PUBLIC RELATIONS

Mrs. J. Rice Williams of Houston urges that each doctor's wife who has made a definite contribution toward public relations this year is urged to report it to the Public Relations chairman of her auxiliary that she may include it in her report to the state chairman.

The work of the Public Relations department of the Woman's Auxiliary to the State Medical Association is to stimulate the auxiliaries to help develop a harmonious understanding and firm relationship between the medical profession and the laity. It is a two-fold endeavor: to contribute toward moulding public opinion concerning the medical profession and at the same time to understand the problems of the people and help them in achieving good health.

Only a few of our auxiliaries are large and compact enough to work as a unit in this field. These few can sponsor Health Day, at which time a program, educational in character, may be rendered by the showing of health films, talks by doctors, distribution of health literature and sample copies of *Hygeia.* Radio programs may be given on health subjects, prizes awarded to school children in essay contests on health subjects.

As a rule, the wife of a doctor, even though not active in auxiliary work, belongs to the worth-while organizations in her community. In these she has a golden opportunity for cementing the medical profession and the public into the same views of medical science. She can see to it that each club has a program on health during the year; she can help furnish the right kind of material for these talks, assist in health drives, the Red Cross, funds for crippled children, cancer, and other similar appeals. She can suggest topics for programs, and thus never miss an opportunity of bringing before a club, medical history, aims, and achievements of the profession. The subject of Blue Cross which is approved by our hospitals would be an informative subject for a paper or an essay, and a help in the fight against government-controlled medicine.

In our state, probably the greatest work that can be done in this department is that done by the doctor's wife in her daily contacts as individual. Her character and activities can be such that she will become a worth-while liaison between the medical profession and the laity, or on the other hand, she might be a damaging power. May the doctor's wife ever uphold the noble profession of her husband!

Over 100 students have already requested applications for medical education loans effective in September.

ANNOUNCEMENTS

A new journal is now making its appearance in medical circles, the *American Cancer Journal.* It is to be published by Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, N. Y. The subscription price is $8.00 per year. The new journal is to be devoted to diagnosis, treatment, research, and abstracts. This journal should be a great power in whipping this so far invincible enemy that strikes down about two hundred thousand people each year in our nation. The editor is Dr. Fred W. Stewart, who will have an advisory editorial board of fifty outstanding men.

Get your hotel reservation to the State Medical Meeting if you have not already. We always have our best attendance in Jackson.

The Guyton Clinic announces to the medical profession that Dr. Charles M. Murry, Jr., formerly of Ripley, Mississippi, and recently released from the practice of ophthalmology and otolaryngology in the U. S. Naval Medical Corps, is now associated with Dr. B. S. Guyton in the practice of this specialty. Tonsil operating has been resumed.

The Sweeney Diabetic Foundation, for study and treatment of diabetes and allied metabolic disorders, Gainesville, Texas, J. Shirley Sweeney, M. D., F.A.C.P., medical director, formerly of Dallas, Texas, opened the past month.

LILLY HEAD DIES

The board of directors and the officers of Eli Lilly and Company suffered a great loss in the death on February 8, 1948, of the company's board chairman and former president, Josiah K. Lilly, Sr.

Deaths

DR. W. M. MERRITT

Dr. Walter McDonald Merritt of Boyle, Miss., died February 1 at the Baptist Hospital in Memphis following a lengthy illness. Former assistant superintendent of the State Hospital for the Insane in Jackson. Dr. Merritt was well known throughout Mississippi. He was a graduate from Vanderbilt University, Nashville.

He leaves his wife and two sons, W. M. Merritt, Jr., Boyle planter, and Dr. C. W. Merritt of Mobile, Alabama. Dr. Merritt was married to the former Miss Mary Martha Presley of Clarksdale last year.

DR. R. E. LONGINO

Dr. Robert Edward Longino, 68, former state sanitary inspector and one time health officer of Coahoma County, died Thursday.

Dr. Longino was born in Orange, Miss., received his medical education at the University of Nashville, Nashville, Tenn., graduating in 1901.

Former addresses included Jonestown, Hardsboro, Prentiss, and Silver Creek, at which places he was connected with the State Board of Health.

DR. HENRY F. TATUM

Rites were held Friday afternoon for Dr. Henry Fletcher Tatum, prominent Meridian physician, church and fraternal leader.

He formerly served on the staff of the East Mississippi State Hospital.

He was an alumnus of Southern University, Greensboro, Alabama., and Tulane University, New Orleans.

DR. ABRAMS POTASNIC

Services were held in Meridian January 8 for Dr. Abrams Potasnic, prominent Meridian physician, who died at the Rush Memorial Hospital of a heart ailment. He was 56.

Dr. Potasnic was a member of the Orthodox Jewish Church.

Born in Wilno Poland, April 3, 1889, Dr. Potasnic came to America for his medical education. He received his M.D. degree in 1911.

The physician leaves his wife, Mrs. Dora Cohen Potasnic, two daughters, Miss Helen Potasnic of Meridian, and Mrs. Benjamin Cohen, Jacksonville, Fla.; a sister, Mrs. Meyer Shonson of Atlanta, and a brother, Mose Potasnic of Meridian.

DR. WILL S. TAYLOR

Services were held Tuesday in Isola for Dr. Will S. Taylor, aged 70, who died there Monday, following thirty years of service to the community as a practicing physician. After services in his home at Isola, the remains were carried to Winona for Masonic burial services at the family lot in the Winona cemetery.

Dr. Taylor was born in Carroll County, Mississippi. He received his medical training at the University of Tennessee and after his internship in Memphis, came to Isola to practice medicine. Dr. Taylor is survived by his wife, Mrs. Will S. Taylor; a son, Mr. Guy Taylor of Isola; four grandchildren in Isola; his nephews: Mr. J. D. Bryan of Belzoni, Mr. Walter Biggs in Jackson, B. C. Shelton of Itta Bena, and Mr. M. A. Bryan of Kilmichael, Miss.; by three nieces Mrs. B. D. Craig living in Virginia, Mrs. L. W. Maples in Gulfport and Mrs. W. L. Wilson of Kilmichael.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
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Pathology—R. M. Moore, Vicksburg, Miss.
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology—Vol. 44; No. 5, November, 1941.

SUSCEPTIBILITY TO POISON IVY DERMATITIS. Louis Zissermann, J. Allergy, 11:600 (Sept.) 1940.

In analyzing the records of 1,879 Boy Scout campers and their adult leaders who had a uniform opportunity to acquire poison ivy dermatitis, the author found that the degree of susceptibility was highest in boys from 12 to 16 years of age and diminished rapidly thereafter with age. The author found no correlation between sensitivity to poison ivy and such physical characteristics as weight and color of hair, nor was there correlation between sensitivity to sunlight and to poison ivy. The analysis also elicited that there was no correlation between susceptibility to poison ivy and the commoner allergic diseases, such as hayfever, asthma, eczema and hives.

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ERYTHEMA NODOSUM FROM SULFANILAMIDE. Adolph B. Loveman and Frank Simon, J. Allergy 12:28 (Nov.) 1940.

The authors report a case of erythema nodosum from sulfanilamide. After its first appearance, the eruption was reproduced twice on further administration of the drug.

The histologic picture was indistinguishable from that of the classic type of erythema nodosum. Chemical tests of tissue taken from an active nodule showed no sulfanilamide.

Patch and intradermal tests with a saturated solution of sulfanilamide on both normal and previously involved areas gave negative results. Patch and intradermal tests with a tissue extract taken from an active nodule and with the blood serum taken at the time of the highest concentration of sulfanilamide in the blood gave negative results on both normal and previously sensitized areas.

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FOOD SENSITIVITY AS A FACTOR IN THE ETIOLOGY *of* ACNE VULGARIS. Frank E. Cormia, J. Allergy 12:34 (Nov.) 1940.

In 25 of 80 private patients with acne vulgaris there was clinical evidence of food sensitivity. The report is based on a study of 32 patients, 12 of whom were not affected by foods. The average age was 22 years, and the average duration of the disease five and seven-tenths years. A history of atopy was present in ten families and a personal history of allergy in four instances.

Elimination of suspected foods greatly improved or cured 50 to 70 per cent of the patients with food sensitivity. Standard methods of treatment, including local application of astringents and roentgen ray therapy, were employed to combat collateral factors and to secure a complete cure.

The foods most commonly found by ingestion tests to cause clinical flare-ups were, in order of frequency, chocolate, tomatoes, nuts, spinach and wheat. The foods provoking the largest number of lesions were, in order, wheat, tomatoes, milk, chocolate, nuts and spinach.

The results of scratch and intradermal tests with foods were of little or no aid in the discovery of foods which caused clinical exacerbations.

PEDIATRICS

ACCIDENTS—CHIEF KILLER OF SCHOOL CHILDREN—Statis. Bull. Metrop. Life Insurance Co., 27:6-8, September, 1946; Quarterly Review of Pediatrics, Vol. 2, No. 4, November, 1947.

"Accidents take the lives of about 6,500 school children a year in the United States, and are now the leading cause of death among school children. Points of attack that might result in lowering the fatal accident rate among school boys and girls are suggested by an analysis of the information given in the death claim papers of children 5 to 14 years, who were insured in the Metropolitan Life

Insurance Company's Industrial Department who died in 1945 from accidents. As shown in the table, motor vehicle accidents accounted for 185 deaths, more than one third of the total of 507 deaths from accidents among boys, and for 73, more than two fifths of the 171 accident fatalities among girls. The great majority of the motor vehicle accidents occurred while the youngsters were crossing the street or highway, or playing in the road.

"Drownings were responsible for one fourth of the accidental deaths. Study of the circumstances surrounding these drownings makes it clear that swimming, wading, and boating can account for the largest number of deaths in this category. Almost one fourth of the group fell into the water while playing on the bank, on a rock ledge, dock, bridge, guard rail, or overhanging tree. Several lost their lives when they fell through thin ice on ponds or lakes. About one fifth of the drownings occurred outside the water sport season May to September.

"More than 10 per cent of the fatalities were due to burns, conflagrations or explosion. Nearly half of these victims were trapped in burning homes. A number of children succumbed to burns suffered while playing with matches or inflammable liquids.

"Forty-eight, or nearly 10 per cent of the fatalities among boys, resulted from shooting accidents. Playing with, examining, or showing guns to companions were common causes of accidents of this kind. Eight of the boys. most of them in early teens, were killed in hunting accidents.

"A number of children accidentally strangled themselves or broke their necks while playing with ropes. Several youngsters were attempting to imitate a hanging seen in the movies or read about in stories.

"Nineteen were killed in accidents on railroad rights-of-way. Of this number, seven were killed while walking along or playing on tracks. Two of the victims were actually sitting on the tracks and watching trains pass.

"It is outstandingly clear from the analysis that many children could be saved from accidental death if parents kept closer watch over them."

COMMENT: One of the greatest headaches that a busy pediatrician is confronted with is the frequent calls of mothers to inform us of some accident, which means the death or near-death of a baby or child, the most of which is caused by the carelessness and negligence and unthoughtedness of mothers. If we could only impress upon the minds of our mothers the extreme importance of keeping all kinds of poisonous material away from where children would be likely to get them and then to observe all necessary rules and safeguards to protect a child's health otherwise, there would be many, many lives saved.

VETERANS ADMINISTRATIVE HOSPITAL

Jackson, Mississippi

Clinical Pathological Conference

February 12, 1948

History and Physical Examination:

Patient R. J. M., a 33-year-old white male, was admitted to the hospital 10/17/47 for treatment of possible abdominal malignancy. was a furniture salesman, and had had only three months Army service. Type of discharge not definitely known, but was not thought to be medical in nature although he had been given an EKG while in the Army because of irregular heart action. Patient did not receive a pension. Remainder of family and personal medical histories non-contributory except for one episode in which patient passed "gravel" one year prior to onset of illness. Chief complaint on admission to this hospital was that of progressively severe abdominal pain of three months' duration.

Symptoms referable to present illness began about four months prior to admission, before which time he had been asymptomatic, feeling well and going about his usual occupation. He first noted a low-grade aching in the lower back and in his legs especially while lying down. Pain was not severe but was dull and constant in nature. Associated with this he began to lose his appetite, began to lose weight, and had a continual feeling of malaise. He noticed at this time that both nipples were gradually increasing in size and that there was aching and soreness to pressure over the mammary areas but no mammary discharge. The left nipple was larger than the right, and both continued to be enlarged and sore during the course of his illness. A short time after the onset of symptoms, he began to develop intermittent "indigestion" manifested by epigastric burning and sense of fullness with occasional low-grade pain in the upper abdomen. Pain and discomfort were not initiated or aggravated by indigestion of food or emptiness of the stomach, were not related to meals, were not relieved by antacids or defecation. There was also intermittent bouts of vomiting, non-projectile in character, not productive of blood and not consistently relieved or aggravating the discomfort.

About eight weeks prior to admission here, patient noted a lump in the left side of his abdomen close to the navel. This mass was hard, non-movable and tender to the touch. He went to his doctor who after examination, advised laboratory and x-ray studies. GI series, gall-bladder series, flat plate of the abdomen and colon studies done early in September were reported negative. Chest film at this time showed rounded area of increased density in the sixth anterior inter-space on the left about 2 cm. in diameter and a similar area just above the left hilum. A questionable focus in the sixth anterior interspace on the right was noted, and it was thought that these were possibly metastatic foci. An IVP was reported as negative. A chest film done ten days later revealed definite enlargement of the previously reported densities. Colon studies repeated at this time failed to show any connection between the abdominal mass and the colon. CSC on 9-1-47: RBC 4,350,000, Hb 87 per cent, WBC 11,800 with 14 per cent lymphocytes and 86 per cent polys. Blood urea was 37; blood creatinine 1.5; blood sugar 90. Sed rate was "increased"; icteric index "normal." Volume per cent was 40. One stool negative for ova and parasites. Gastric analysis showed free HCl 34 ,total acid 98, and was negative for blood.

With the above information, an exploratory laparotomy was done. At operation, ". . . the tumor was found to be retroperitoneal and completely surrounding the aorta. The frozen section taken at the time revealed what was thought to be a sarcoma . . . None of the intra-abdominal organs were found to be involved." A biopsy was taken but no attempt at complete removal of the mass was made. The patient was then given four deep x-ray treatments which were discontinued for reasons not known. A permanent section of the tissue was subsequently diagnosed as adenocarcinoma, grade III.

The patient continued to lose weight rapidly, an estimated 50 pounds being lost in four months. Vomiting became more severe and frequent with gradual intolerance to all solid foods. Three days prior to admission, he began to cough and produced blood which was originally bright red but in later paroxysms was clotted. Amount was variable from streaking to a teaspoonful or more. Bowel habits were regular until he was operated on, when he became constipated. Stools were hard and brownish-black but not frankly tarry, and usually had to be obtained by enema.

Positive findings on physical examination when admitted were: appearance of chronic illness with pain and discomfort, marked wasting of the tissues, enlargement of the nipples and mammary tissue with tenderness to palpation, wheezing rales over both bases. BP 120/70, P. 136, linear left pararectus well-healed scar with induration of tissues beneath it, small firm, tender irregular, non-movable mass to the left of the umbilicus. Examination of the rectum, genitalia, neurological system, and search for lymphadenopathy were negative.

Course in the Hospital:

While in the hospital, the patient ran a low-grade, intermittent variable elevation in temperature. He was placed on liquid diet and intravenous feedings, but it was found that amigen, blood plasma and other intravenous protein preparations produced a marked anaphylactic reaction, manifested by dyspnea, sense of suffocation, wheal formation, vertigo, and tingling sensations in the extremities. Portable chest film done 10-21-47 showed "numerous large round densities scattered throughout the parenchyma of both lungs which have the characteristic 'snow-ball' appearance of metastasis." Admission CBC: 4,750,000; Hb. 14.5 gms., WBC 6,500 with 69 per cent polys, 28 per cent lymphocytes, 2 per cent monocytes and 1 per cent eosinophils. Urinalysis negative for sugar and albumin with specific gravity 1.000 and acid reaction. Subsequent urinalyses showed a concentration up to 1.020. Serology was negative; serum proteins 5.62 per cent with 2.92 per cent; albumin and 2.70 per cent globulin. Sed rate 50 mm. Blood glucose was 106, NPN 24.7, and chlorides 453. Acid phosphatase 1.00 and alkaline phosphatase 9.16 units. EMG was normal; Friendman's test markedly positive.

Course was progressively down-hill: he was given glucose infusions, vitamin C and K, continuous oxygen, and had to be sedated with ever-increasing doses of morphine because of pain in the abdomen and in the right chest, and progressive apprehension. Dyspnea occurred early and became so severe that even the act of urination or attempting to swallow placed the patient in acute respiratory distress. Repeat chest film on 11-17-47 showed "many masses distributed throughout both lung fields somewhat larger than in the previous examination."

Terminally, the patient suffered increasingly frequent strangling attacks, hemoptysis, nausea and vomiting, and progressive dyspnea, and fluid was thought to be present in the right chest. The mass had become several times its original palpable size. Constipation was constant, and enemata produced such severe dyspnea and strangling that they were discontinued. Patient became progressively weaker, and expired 8.25 a.m. on 12-3-47, after an irrational and semi-comatose night.

PATHOLOGIC FINDINGS:

Both breasts were enlarged. The left lung weighed 1100 gm. and right 1500 gm. In each lung there were multiple circumscribed nodules varying in diameter from 15 to 60 mm. Their cut surfaces were honeycombed, dark red and bloody. One of the tumor masses had eroded through a branch of the bronchus to the left upper lobe. The liver contained several small similar appearing nodules. Retroperitoneally and to the left of the midline, extending from the renal vessels to the bifurcation of the aorta were several tumor masses. Microscopically the tumor had the characteristic structure of a chorionepithelioma. Multiple sections were made through each testis but a primary tumor could not be found. There is a marked decrease in spermatogenesis. The interstitial cells of Leydig appear in normal numbers.

This is believed to represent an extragenital chorionepithelioma probably derived from epithelium in the region of the left primitive urogenital ridge. This type of tumor is uncommon in the female and rare in the male. There are only six undisputed cases of extragenital chorionepithelioma in the male reported in the literature prior to 1946.

State Board of Health

Felix J. Underwood, M. D.

THE ESSENTIALS OF A STATE-WIDE COMMUNICABLE DISEASE CONTROL PROGRAM

E. G. McGAVRAN, M.D., M.P.H.
Chapel Hill, N. C.

In a world torn by discord and conflicting ideologies, the one bright spot on the horizon of real international understanding is the World Health Organization. I hope that fact means something to us here in this country. I hope it means clearly that health is a universal need and language, and universal concern and problem that recognizes no political barriers, be they national or state. We must, in other words, recognize that the health of Mississippi is the health of the surrounding states and nation. In no place is this more true than in communicable disease control. While my comments must necessarily be considered as applying generally to the United States, I hope that some of the basic principles and philosophy may be applicable to Mississippi and helpful in consideration of your problems here.

The **first essential** of any communicable disease program is **diagnosis** and **reporting**. Most communicable disease is not reported because it is never diagnosed. It is academic to say that we should report upon suspicion, as the law requires of all citizens. Just imagine the mess the health department would be in if this process were actually carried out. By common community consent, we have relegated the reporting of communicable disease to those we hold responsible for diagnosis. This means largely the family doctor, the general practitioner.

The first step then is to get sick people to go to their family doctor. This is not as simple as it sounds. We know, for example, that the majority of gonorrhea cases will not go to the doctor even though he can give them a simple immediate cure. For those of us who are physicians and health workers, it is sometimes hard to realize the resistance that still exists to going to a doctor. Probably the chief obstacle is financial. The public hates to spend the cost of an office or home call.

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*Abstract of paper presented at the Annual Meeting, Miss. Public Health Association, Jackson, Miss., December 8-10, 1947.

They think that better than ninety per cent of all illness will cure itself without medical aid and so they put off making that call. For those in the lower economic brackets—and I'm thinking not of the unfortunate few but of sixty per cent of the people in the United States—unexpected illnesses are a real ecomonic hazard that some cannot hurdle. Prepaid medical care and hospitalization care on an insurance basis seems one of the best solutions advanced so far for alleviating this situation. Less has been done in developing adequate medical care insurance programs than for hospitalization, yet the former is of vital concern to public health for it is one of the first steps in getting the patient to the doctor.

There are other economic reasons why people put off going to the doctor. A few are so healthy that they don't want to break their records—like an aunt of mine who at eighty years of age is terribly proud that she has never had a clinical thermometer in her mouth. Such people are few, however; but there are many who don't go because they do not know how to select a good doctor. A vast majority of the public feels that a mere M.D. degree and a state license to practice do not constitute a competent doctor. They want some assurance that he is really qualified for medical practice—keeps up with the latest advances reported in the literature, goes to postgraduate courses, medical meetings, etc. Broad knowledge plus skill and judgment in its use is certain to increase the public's confidence in doctors.

After the patient goes to the doctor, what happens in the case of communicable disease? Although the general practitioner can and should report upon suspicion, we know that in the vast majority of cases he may be suspicious of more than one disease. He has to have reasonable suspicion of one disease. In other words, he must have at least a tentative diagnosis. The second step then is to provide the family doctor with all aids and facilities for a diagnosis, tentative and final. Let us not be guilty of complaining of lack of coöperation of the medical profession. The fault is largely ours. Let me outline what I mean by providing the family doctor with all facilities and aids.

First, we should provide consultative faculty. There are no tests and laboratory procedures that suspass good clinical judgment. An acid fast organism in the sputum does not necessarily mean tuberculosis, nor a four plus Wassermann, syphilis. A positive Widal test doesn't mean typhoid. Laboratory procedures are diagnostic aids—tools to be used with skilled clinical judgment. Without that judgment the tools may get us into trouble. In certain areas histoplasmosis is much more common than tuberculosis. Clinical judgment demands training and constant experience.

Many communicable diseases are now so rare that the average physician may not see a case very frequently in general practice. A consultant should see every case the community might have in order to maintain his clinical experience. The health officer is the man who should see all the cases of communicable disease in any community. To act as consultant, he must by all means be well qualified. This means repeated refresher courses in communicable disease control, continuous study of epidemiology, and an opportunity to see and work with communicable diseases. Besides this, he must develop such rapport with the medical profession that he will be looked to and used as a consultant. The state health department is too distant to render such service except in epidemics. The local health department is the logical unit to do this job, strategically situated as it is to give day by day attention to community health problems.

Second, we should provide diagnostic facilities through a state laboratory with all services, and through local laboratories approved and supervised. When we realize the margin of error which can occur even in our best laboratories, it is appalling how a poor laboratory can and does mislead. Small laboratories should be discouraged unless there is sufficient laboratory load to employ qualified personnel and warrant supervision. It is important for the local health department to be the dissemination center for not only laboratory test material but also for information to the doctors and to the community of the many and fine facilities that are so easily available to them throughout the state, and most important of all for interpretation of the laboratory reports. Facilities should be expanded to cover as many of the diagnostic problems confronting the doctor as possible.

Third, it is my belief that we should provide x-ray facilities, including consultation. X-ray is a laboratory procedure and facility and should be treated as such. Everyone is aware of the errors that may be made in the interpretation of films. The x-ray is only a shadow picture and has often been misused because of lack of knowledge in interpreting it. Yet if x-ray is the important diagnostic tool we think it is for communicable diseases such as tuberculosis and pneumonia, there seems little reason why it should not be just as available to the family doctor and the public as diphtheria cultures or sputum examination. A good consultant on the state health department staff to interpret and check the interpretation of x-rays would contribute much to communicable disease control.

The next step is to educate the family doctor to make fullest use of all these diagnostic facilities. In the medical schools the departments of public health and preventive medicine are doing this very thing. Health department personnel, doctors, and nurses particularly must make opportunity to bring these services to the attention of the family doctor to help make them readily available.

In achieving the all-important diagnosis and reporting, it is imperative to make the procedure as simple and easy as possible. Reporting usually is easy for those who know the local health department personnel but it is more difficult for the outsider who comes into the county to see patients, or who sees these patients in his office perhaps fifty to a hundred miles from home. Ease of travel has made this latter procedure extremely common and therefore it is increasingly important to develop reporting forms that are state-wide and interstate-wide, with some central clearing office that will report back to the county the communicable disease of its residents. There is also need for uniform regulations in cities, counties and states. We fortunately have the standard communicable disease procedure in the American Public Health Association's revised edition of *The Control of Communicable Diseases* (6th. ed., 1945), representing not only the best thought in this country on the subject but in many other parts of the world. It is most desirable that health departments draw up their communicable disease control regulations in conformity to this universal, accepted standard.

The second essential in a state-wide program of communicable disease control is good treatment. The health officer as a consultant should be a source of help to the private practitioner by having kept up with the latest advances in the field and therefore in a position to give authentic and desirable modifications in the treatment programs.

Free biologicals and drugs for all who cannot readily pay for them, as determined by their family doctor, is also important to the success of the program.

The next step in good treatment is more adequate public health nursing service—the more universal use of public health nursing by the family doctor in all his communicable disease cases for bedside care, for isolation of the infectious individual, and for education of the family and the community. The family doctor today can hardly practice good communicable disease control without the aid of the public health nursing service.

Modernization of laws, rules and regulations pertaining to communicable disease control is needed. The quarantine of scarlet fever, for example, is still the practice in much of the United States, although its value as a means of control is nil and has been known to be nil for many years.

The third essential in a state-wide program of communicable disease control is good epidemiological service. The first step in achieving this is concurrent field epidemiology by the family doctor, by the health officer, and by other health department personnel. To wait until an epidemic has developed to start epidemiological investigation is like locking the barn door after the horse is stolen. Every case of communicable disease is a potential epidemic and its source and contacts should be sought and controlled and studied with as much interest and care as the case itself. Carrier control programs, educational programs, and rehabilitation programs are all part of a good epidemiological service and should be thought of along with diagnosis and treatment of every case of communicable disease.

The second step in good epidemiological service is an adequate immunization program, a program levelled at the age group where control is most effective, rather than at an age group or occupational group most convenient to the health officer. I am pointing my finger at the school immunization programs. These have been in the past good and important because of their educational value, but there is little excuse for continuing to concentrate upon an age group six years too late. We could also profitably evaluate the typhoid immunization programs that have been routine in some areas.

The third step in good epidemiological service is the repeal of laws or regulations that circumvent any sound effort to control communicable disease. Here again, the public schools are cited. The allotment of funds upon the basis of attendance forces children to school when they should be home and in bed with beginning illness. Communicable disease is most infectious in the early stages. The law and its administration similarly penalize a teacher or employee who misses a day of school and so they too come and mingle with healthy groups while in the most highly infectious stages of disease. Until we get rid of "perfect attendance records" and other devices that put a premium upon bad health practices; until we encourage rather than discourage the teachers, employees, and students to practice self-isolation in the early stages of communicable disease, many of which start like a common cold, we cannot hope to get to first base in controlling communicable disease in the school age child.

The fourth essential to a good state-wide program is a good epidemiological research program. Not only does such research hold the key to much that is still unknown in the control of poliomyelitis and many other diseases, but the very act of research is a powerful force in maintaining up-to-date diagnosis, treatment and epidemiological procedures.

I have briefly sketched four essentials for a good state-wide communicable disease program: 1. Diagnosis and reporting; 2. treatment; 3. epidemiological service; 4. research programs. The crux of providing these essentials is the development of complete coverage of every state by full-time county and district health departments, adequately financed and staffed by qualified personnel. To do this we must have trained and qualified health officers, nurses, sanitary engineers, sanitarians, and health educators. Such personnel to staff these units is the Number 1 problem of public health. Three factors vital to this goal are: 1. Adequate compensation; 2. Authority commensurate with responsibility; and 3. Professional standing, security and tenure of office.

In conclusion, I want to say that until this goal of full coverage of all counties with full-time-health departments, adequately staffed and financed is accomplished, the communicable disease control program of Mississippi of any state will remain spotty and ineffective. Public health must go with vision, hand-in-hand with the medical profession, toward this common goal which is the written and accepted objective of the American Public Health Association and the American Medical Association.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Jan. 1948	Jan. 1947	Jan. 5 Yr. Avg.
Poliomyelitis	0	6	3.2
Bacillary Dysentery	2	28	118.2
Diphtheria	25	22	27.2
Influenza	236	395	10819.6
Measles	129	61	635.6
Meningococcus Meningitis	4	6	19.2
Other Forms Meningitis	6	4	5.2
Pellagra	2	3	95.4
Pneumonia	127	165	1656.8
Pulmonary Tuberculosis	159	139	138.4
Scarlet Fever	39	36	72.8
Smallpox	0	1	1.0
Tularemia	4	9	4.2
Typhoid Fever	3	1	3.2
Typhus Fever	6	6	6.6
Undulant Fever	0	8	3.4
Whooping Cough	18	64	401.8

Woman's Auxiliary

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PRESIDENT'S MESSAGE

The Auxiliary year of 1947-1948 is fast drawing to a close. I'm sure that each of us feels that we have not accomplished as much as we had hoped to in the beginning. There is still time for us to reach some of our goals if we will make the best use of our time for the next six weeks.

If you have not arranged for the superintendent or one of the nurses of your hospital to talk to the high school girls of your county on entering nurses' training as a profession, it is not too late.

If you have not encouraged that group of doctors' wives, where there are even five or six, to organize an auxiliary, it is not too late. Mrs. Avent and I will be delighted to assist any group that is interested in organizing.

If you have not written or invited that doctor's wife, in your community who is not a member, to join, or if you have not written that doctor's wife who lives in another community, but is not an auxiliary member, to join, it is not too late.

If you have not informed yourself on socialized medicine so you can talk intelligently to the public, and have not taken advantage of every opportunity to inform the public, it is not too late.

If you have not observed Doctor's Day, it is not too late.

It is time for annual reports. I'm looking forward to a large increase in membership and activity in each auxiliary's report. I am also looking forward to seeing each auxiliary member in Jackson, May 11-13.

MRS. S. B. McILWAIN

CENTRAL MEDICAL AUXILIARY

Plans for the observance of Doctor's Day in April at the Robert E. Lee Hotel were announced at the Central Medical Society Auxiliary meeting last month in the H. R. Shands home.

Mrs. T. E. Wilson, president, presided over the business session and Mrs. Brister Ware gave the invocation. Mrs. James Grant Thompson made the announcement about Doctor's Day.

Refreshments were served from a beautifully appointed table centered with an arrangement of pink carnations.

Co-hostesses with Mrs. Shands were Mrs. R. C. O'Ferrall, Mrs. W. C. Thompson, Mrs. Dyke Hagaman, Mrs. George E. Twente, Mrs. Mrs. George E. Riley, Mrs. W. R. Bethea, Mrs. Harvey Garrison, Sr., Mrs. George Twente, Mrs. H. C. Ricks, and Mrs. Felix Underwood.

Members and guests present were: Mrs. Brister Ware, Mrs. Byron Alexander, Mrs. Van Dyke Hagaaman, Mrs. George E. Twente, Mrs. George E. Riley, Mrs. R. C. O'Ferrall, Mrs. Luther Crull, Mrs. O. P. Myers, Mrs. T. A. Baines, Mrs. Thomas G. Ross, Mrs. John Walker, Mrs. J. W. Barksdale, Mrs. J. Walton Lipscomb.

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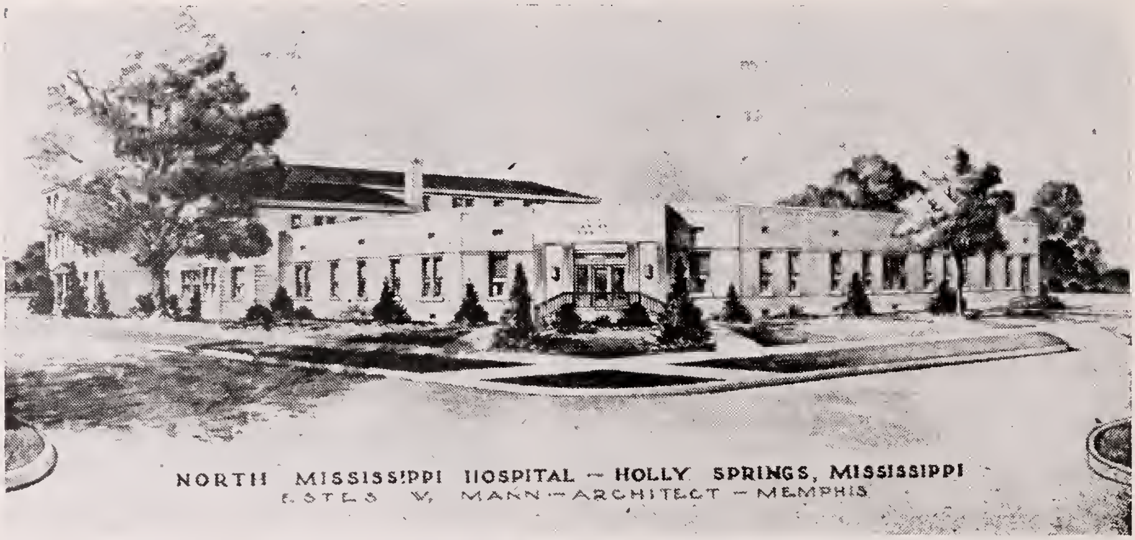
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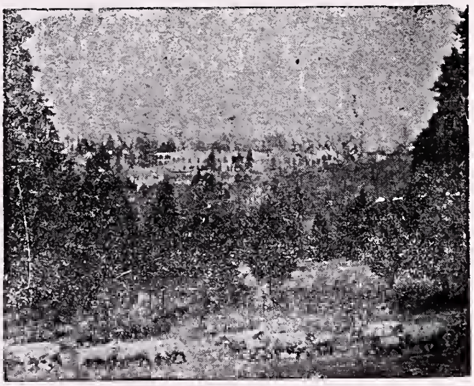

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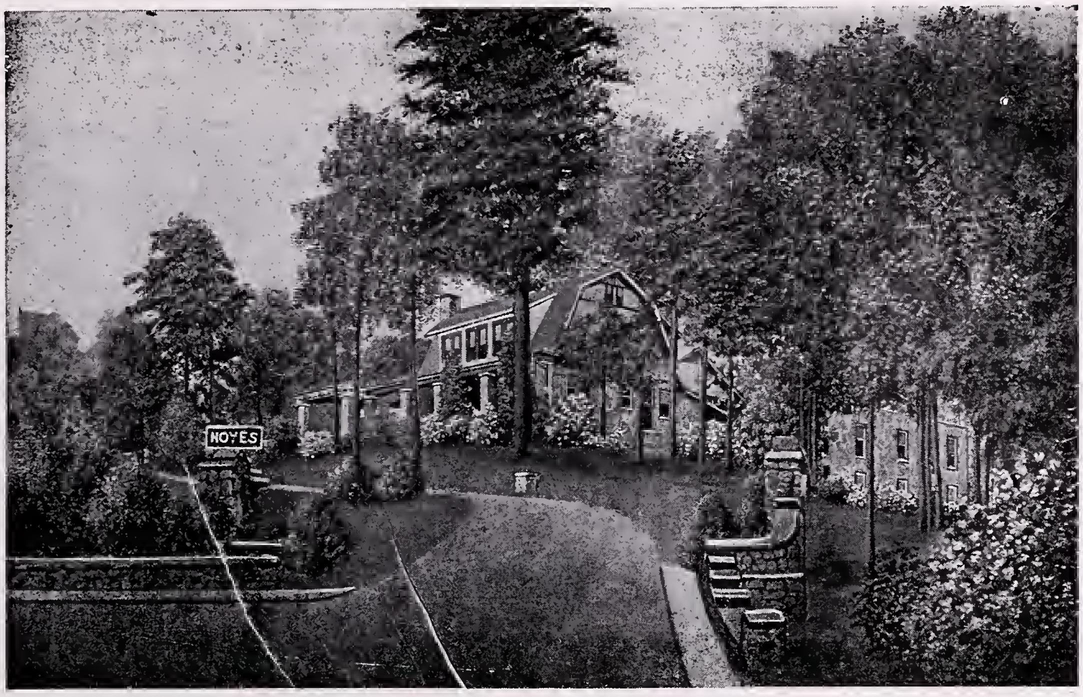

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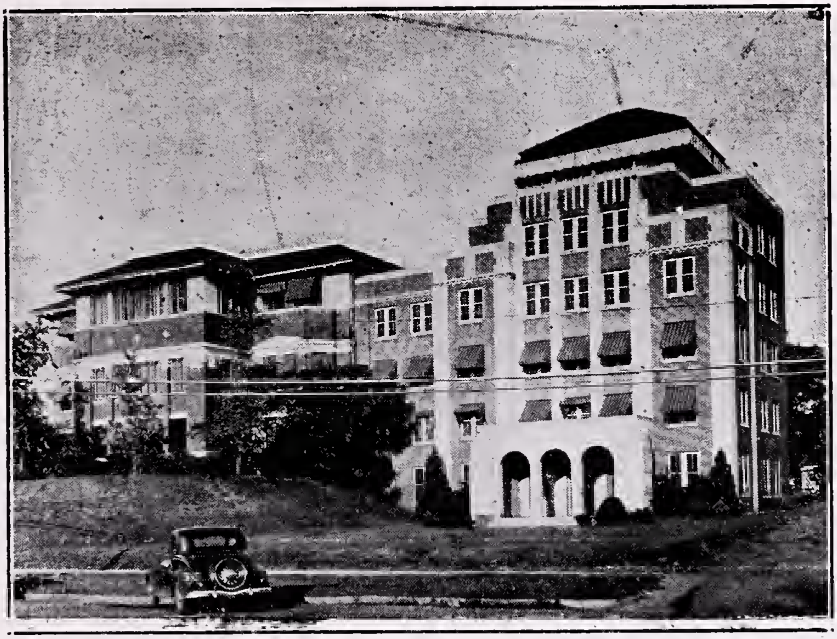

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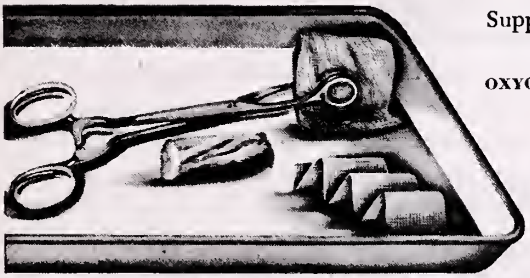

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1. Haven Emerson: Journal Lancet, 57:1, 1947. 2. Registered trademark, Sharp & Dohme. 3. M. Clin. North America 27:567, March 1943.

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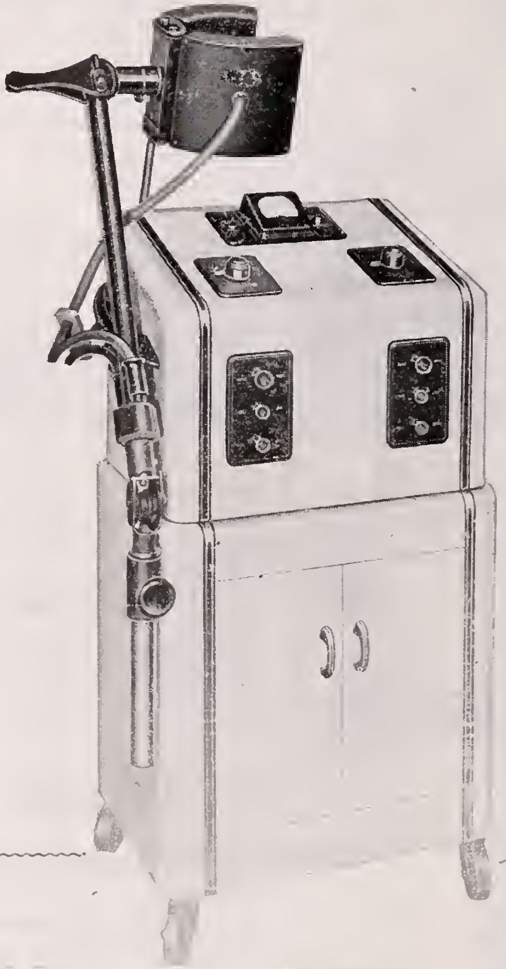

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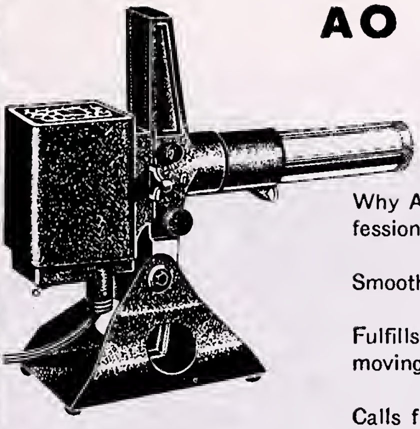

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Ophthalmoscopy and the Hypertensive State

Resumé of a demonstration of 100 Kodachrome color fundus photographs

ARTHUR J. BEDELL, M.D., F.A.C.S.
Albany, New York

THE HYPERTENSIVE STATE IS fast assuming the role of the most important constitutional disease and the cause is, as yet, undiscovered. The blood vessels must be studied for frequently they present the first evidence of what may prove to be an annoying, crippling or fatal malady. The ophthalmoscopic signs are of the greatest import and warrant the careful scrutiny of the gross and microscopic alterations found under many and varying conditions, including age, sex and hereditary predisposition.

Clinically and ophthalmoscopically, hypertensives may be divided into the essential and the fulminating. The vast majority of those in the essential group live for many years and die before a retinopathy develops.

The fulminating cases usually run a severe, comparatively short course with exudates and hemorrhages.

The demonstration includes the earliest fundus change, a narrowing of the arteries, which may be smooth or almost nodular in appearance. On occasion, it may seem that the veins are dilated rather than the arteries narrowed. Critical inspection of each case will enable the trained observer to distinguish between these two confusing pictures.

Some authors speak of the indention of a vein where crossed by an artery as one of the most important indications. This is frequently present but is by no means pathognomonic for it has been found even when the blood pressure was normal.

In other cases, tortuosity of the vessels is the dominant early alteration. The twistings may be of the veins, the arteries or both, and may be over a wide portion of the fundus or confirmed to the perimacular region.

In contrast to the tortuous vessels are the straight arteries which are restricted in lumen and almost invariably denote a progressing hypertension. This same narrowing may be observed in arteries which follow the common pattern of distribution. If the patient is under 40, this may be assumed to be positive evidence of hypertension. After 60 this same constriction of the vessels may be the result of senile changes, hypertension, or both, so that the question of age is of vital interest. At some time in the course of hypertension there are curious reflections from the arteries which look like freshly strung copper wires. This is known in the literature as the copper wire reflex. As the sclerosis of the vessel increases, the red of the copper is less intense and the vessel may even become white, a silver wire. At any time during this conversion from copper to silver, there may be other changes in the fundus such as hemorrhages or exudates.

Much has been written regarding the acute angle crossing of arteries and veins. As noted in some of the cases demonstrated, this angulation has remained stationary for years, while the pressure has been steadily rising.

In contrast to increased visibility of the vessel wall is its absence, as found in spasm where the lumen is abruptly reduced even to the point of complete obscuration. It is said that in these spasms there is frequently an overlying edema, the "cotton wool spot." There may be a spasm of the central retinal artery of such severity and duration that the entire fundus becomes blanched and vision totally lost. Circulation is gradually restored and the fundus returns to its normal pink without evident damage to the vessels but the eye remains sightless. Other patients complain of transitory blindness. Examination during an attack shows a constriction of one or more arteries. When these episodes recur over a considerable period, the arteries become permanently closed, the disc white and the eye blind. These direful effects were well shown in the photographs.

In a sudden partial loss of vision there may be a milky-white edematous cloudiness of the area supplied by the spastic vessel. Later on, the edema subsides and a white walled vessel remains. A translucent swelling, edema, precedes the formation of a stellate exudate in the macular region. This may be thick or thin, partial or complete and have long or short radiations. When the exudate decreases

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*Delivered at the fifty-ninth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 10-13, 1948.

there is a separation into smaller spots and shorter thinner lines. If the patient lives long enough the star may entirely disappear, although usually it is the manifestation of a severe vascular involvement and indicates an early death.

There are, however, exceptions where, as in the case shown, the delicate rays of the star were caused by an increased NPN without any other demonstrable kidney or vascular dysfunction. When the NPN was reduced to normal, complete resolution took place with restoration of function. Sometimes the lines radiate from a central clear pink circle. They may be combined with an intense swelling where the disc margins are completely hidden by a waxen pallor of the retina and great massive hemorrhages, or they may be indicative of a severe hypertensive kidney lesion where the retinal exudate is thick, yellow-white and most marked in the peripapillary region.

Reference is frequently made to a red or white fundus which simply means that in a fat and red-faced individual the fundus is red, whereas in the thin anaemic patient the fundus is blanched. These contrasting types were illustrated.

The ocular fundus is the only part of the body where it is possible actually to see the changes which take place when an artery is suddenly occluded. If the closure is caused by an embolus, there is an interruption of the blood stream, a fragmentation of the current, and an edema confined to an ovoid area which includes the macula. As the retina is thinnest in the macular region, the choroid is reflected through it. In the beginning this so-called cherry-red spot is small and it only enlarges as the edema subsides. When compensatory circulation is established, the disc is white, there are no plaques in the vessel walls and the eye is blind. In endarteritis there is almost invariably some vessel sclerosis at the time of the sudden loss of sight and it is always present in the terminal stage where white plaques are seen in many vessels.

A thrombotic occlusion may be in either an artery or a vein and may be partial or complete. In a branch obstruction, the blood follows the arcuate distribution of the retinal fibers, is gradually absorbed and frequently, as in the case demonstrated, entirely clears, although the basic underlying hypertension persists.

In total thrombosis of the central vein there is a loss of the disc outline, marked swelling of the retina, great dilatations of the veins, narrowed arteries and extensive extravasations. This may end in almost complete resolution but the artery changes continue and in the case exhibited the patient died two years later.

Central vein thrombosis may be the terminal accident of a progressive hypertension and a patient may be in the hypertensive state for years before it occurs. The closure may be looked upon as evidence of a transition for the worse. In the reported case, the patient died six months after it happened. When the superior temporal artery in a patient with very high pressure was suddenly plugged, there was considerable bleeding which eventuated in the development of a complicated system of adventitious vessels about the white-walled, closed artery. The high blood pressure endures.

In some cases where the arteries are small and the veins dilated, there may be innumerable small thrombi throughout the entire visible retina, the so-called apoplexy. These do not necessarily imply an immediate fatal outcome for they may develop in cases with moderate hypertension. A single striate, superficial hemorrhage may form when the arteries are in the state of copper wire reflex, where the pressure is high and the patient young. Such a case has been followed for years. In the beginning the pressure was 132 and there was slight compression of veins. Ten years elapsed before he had a retinal hemorrhage, which, however, proved to be transitory. He is still living at the end of another nine years.

Papilledema assumes many forms depending upon the duration and intensity of the underlying cause, as well as the structural variations in the nervehead. In one type the veins are large, the arteries very narrow and irregular in caliber and the big disc elevated. As time passes, the swelling subsides, radiating exudates appear in the macular region and death supervenes in a few months.

In patients of advanced age, the hypertension may be moderate, the surface of the nervehead enlarged, the outline lost and only a few hemorrhages found on its rounded surface. In this connection it is well to remember that a patient may have a papilledema and a brain tumor. Extreme care must be exercised in distinguishing between a simple hypertensive choked disc and one caused by tumor.

This is often extremely difficult and we must not be satisfied with the diagnosis until all methods of differentiation have been employed and evaluated.

Two cases of choked disc were illustrated. In one there was an extremely high degree of swelling with an alarming elevation of blood pressure and good vision. In the other, the hypertension was lower and the disc flatter, wider and paler with less precipitous margins. The patient was blind.

When hypertension develops in the course of pregnancy, special care of the mother is obligatory. The earliest danger sign is a localized spasm. Unfortunately, some patients who have high pressure in the early months of pregnancy are allowed to continue to term. A case in point was one where termination was advised at the end of the fourth month. The advice was not followed. She came in three years later with a severe retinopathy which passed through the usual stages of a macular star, severe deterioration of vision and a permanent high grade hypertension.

Another woman when four and one-half months pregnant had a marked bilateral papilledema and was told that labor should be induced. The advice was followed. The edema subsided and the vision was retained. A 42-year-old woman was allowed to go to full term although she complained of visual disturbances. She had marked vessel alterations, very narrow arteries, distended veins, which were compressed where crossed by the arteries, and a papilledema of 5D. The swelling of the disc subsided but the hypertension continued.

There is another type of papilledema where the circumpapillary and papillary edema is of rapid onset and uncontrolled by treatment, which pass through the stage of enormous retinal edema, complete loss of disc outline, very irregular lumen of arteries, many hemorrhages and death follows in a few months.

A patient of 62 years came in when the arteries were narrow and the bloodstream of uneven volume. The picture remained almost the same for three years when there was a sudden neuropapillary edema of high degree with many hemorrhages about the disc and great distention of the veins. This was followed by partial absorption but the nervehead always remained vascular and the patient died from cardiac decompensation.

Examples of long-continued essential hypertension are not infrequent. A woman of 55 was treated for many years without any alteration in the retina except moderate vascular changes. Suddenly, a cotton wool spot appeared and the family was told her condition was worse. The spot disappeared in a few days and she lived for another four years.

A 60-year-old physician was advised, because of hypertension, to decrease his activities. His arteries were small and slightly irregular in caliber. He did not lessen his work and as a result when seen three years subsequently, he showed edema of the retina, many superficial hemorrhages and more artery irregularities. He died in six weeks.

There are patients when seen soon after the onset of constitutional symptoms have gross contractions of the retinal arteries. They are advised to relax, but no attention is paid to the warning. Eventually, they return in the fulminating stage of retinopathy and in a few months expire.

A patient may be first examined when the retinopathy is marked. All attempts to improve his general condition are unavailing, and although the exudates and hemorrhages subside or even disappear, he soon succumbs.

It is probable that all hypertensives develop arteriosclerosis if they live long enough. There is however, a group in which arteriosclerosis develops without hypertension. There is early whitening of the more or less straight arteries. As the process continues the white walls become more evident, and, if severe and extensive, leads to arteriosclerotic optic atrophy. There may be a single, isolated vessel with great atheromatous plaques so irregular in width that sometimes they are much wider than the vessel.Both the arteries and the veins may be sclerosed.

Occasionally the sclerosis is limited to the retinal vessels of the macular region. The vessels of the macular choroid may be involved and in stereoscopic photographs each layer be isolated.

An excellent opportunity for the study of arteriosclerosis is found after central vein thrombosis where both the arteries and veins show white walls, with widely dispersed and widely separated plaques.

In closing this discussion, operations for the relief of the hypertensive state demand attention. From the purely ophthalmoscopic standpoint, it seems feasible to separate hypertensives into three groups; first, those who are devoid of retinal edema and show only moderate blood vessel changes. These are the favorable cases for operation.

The second group includes those with mild retinopathy as evidenced by cotton wool exudates and hemorrhages engrafted upon the diseased blood vessels, especially narrow arteries with irregular lumen. Many of these seemingly do well after operation which must not be attempted until the patient has been thoroughly examined as to his response to rest, drugs and cold, has had complete laboratory tests to determine the efficiency of the kidneys and exhaustive studies of the heart and general vascular system. If these are determined to be sufficiently stable operation may be done. Even after the most careful screening disappointments are not rare.

Those in the third group are, in the light of present knowledge, very grave risks for, although a few isolated cases have been reported as benefited by operation, it is doubtful if life is lengthened or physical discomforts relieved sufficiently to warrant serious surgical intervention. These dangerous cases include papilledemas, rapidly advancing fulminating retinopathies and the neuropapillary edemas with extensive hemorrhages.

The object of the demonstration was to call attention to the fundus changes found in the hypertensive state so that all who will may become familiar with them, either by personal examination of the fundi or by the realization of what the ophthalmologist refers to when he renders a detailed report. By a closer coöperation, the serious cases will be excluded from operation and more of the favorable ones will be subjected to the present day splanchnicectomy.

The Problem of Granuloma Inguinale*

SWAN BURRUS, JR., M.D.
Greenwood, Mississippi

THERE IS A disease epidemic in the Southern United States which because of its difficulty of diagnosis, its chronicity, its relative resistance to treatment, its sordid and malodorous characteristics and because of its peculiar affinity for Negroes is generally neglected by members of the medical profession. As a result of neglect of this group of cases and chronicity of the disease due to inadequacy of treatment, many cases are now filtering into the rapid treatment centers operated by the State Board of Health—this in spite of the fact that the disease has never been indisputably classified as venereal in origin.

The four-fold purpose of this paper will be to point out some of the serious aspects of granuloma inguinale, to present practical methods of diagnosis, the newest forms of treatment, and to make a plea for more serious consideration of this disease.

The patient with far advanced granuloma is a pitiful individual indeed. His lesions are usually somewhat painful; there is great discomfort and inconvenience from the profuse, odorous, persistent drainage from the lesions; he is more or less incapable of doing any but the lightest forms of work; but worst of all, because of the offensive odor surrounding him he is socially unacceptable, his friends drift away from him and he even has a hard time finding a doctor or clinic that will tolerate his unpleasantness over the long period of time required to relieve him and heal his lesions. If untreated he gradually and progressively becomes more incapacitated, more offensive, more friendless, cachetic, bedridden, and finally dies—usually of septicemia. Today more widespread knowledge of early diagnostic methods plus adequate and persistent treatment with the antimony compounds or the newer streptomycin should drastically reduce the number of such fortunate cases.

Granuloma inguinale in late stages can usually be diagnosed merely by inspection, but early lesions many times will defy accurate diagnosis. In the typical case there is a history of a persistent, non-tender inguinal or genital lesion which began either as a small red macule-papule which spread periperally, or as a non-tender subcutaneous "risen" (pseudobubo) which erupted. More times than not there is a history of smaller "daughter" lesions also. Close inspection reveals that the lesions are elevated, cherry-red, velvety-soft, easily-bleeding areas with irregular, but very well-delineated, raised, rolled edges. There may be a grayish pseudomembrane which results from secondary infection with spirochetes, bacilli and cocci, and such lesions are difficult to distinguish from chancroid. Chancroid disease, however, can usually be distinguished by the fact that it produces inguinal buboes and responds rapidly to sulfathiazole therapy. Granuloma inguinale does not affect regional lymph nodes, and of course does not respond to sulfa therapy. Early granuloma lesions must also be differentiated from primary syphilis, and when there is a concomitant false-positive serological test the diagnosis can only be made by demonstrating Donovan bodies in smears from the lesion. It is necessary to bear in mind that lesions may represent mixed infections.

Concerning the absolute diagnostic test, i. e. by finding the Donovan bodies: This is a difficult task in most cases even for experienced persons (and only experienced persons are capable of identifying Donovan bodies), and is comparable to the task of finding tubercle bacilli in sputum smears. Any physician, however, can easily make the smears and refer them to a pathologist or to a rapid treatment center for examination. It is rarely necessary to obtain a biopsy specimen if the smear is made properly. This is done by smearing between two slides a small bit of clean granulation tissue from the lesion and staining the preparation with Wright stain for 15 minutes. The Donovan bodies (thought to be protozoan organisms) appear as encapsulated "commas" or "safety-pins" located within the cytoplasm of large mononuclear cells. There are other forms, but these are the most common and most characteristic. Many artefacts appear on smears, so that only the expert can pick out the true Donovan bodies.

TREATMENT

Streptomycin it is predicted will revolutionize the treatment of granuloma. The University of Georgia School of Medicine experimenting with streptomycin therapy reports results bordering on the realms of the miraculous. They report healing within two to three weeks time of extensive lesions that had been present for periods of eight to ten years! At the Delta Medical Center we have treated several patients with extensive lesions using streptomycin and have seen healing occur in two weeks time. The dosage recommended by the Georgia Medical group is 4 gms. per day for five days. Toxic reactions were few in number and mild in nature. No eighth nerve damage was observed.

ANTIMONIALS: Tartar emetic and fuadin the two drugs most widely used in treating granuloma are effective in early stages of the disease, but are found wanting in the late stages. Six to twelve weeks of antimonial therapy will in most early cases produce healing and prevent recurrences, but in our experience few patients will continue their treatment over such a long period of time, and recurrences are the rule rather than the exception. Dosage of tartar emetic: (2 i. v. injections of 1 per cent solution weekly until lesions are 80 to 90 per cent healed; then one injection weekly for three months thereafter). Initial dose is 3 cc.; this is increased by 2 cc. per dose until a maximum dose of 10 cc. is reached. Toxic symptoms such as chest pain, cough, nausea, vomiting diarrhea and abdominal cramps will usually disappear when the dosage is reduced. Pneumonia can occur as a direct effect of antimony intoxication. Bradycardia is another serious toxic effect.

Fuadin is similar to tartar emetic in effectiveness, but can be given intramuscularly. Dosage: initial dose 1 cc.; increase by 2 cc. until maximum dose is given. Injections are given twice weekly until lesions are 90 per cent healed; then 5 cc. dose is given *once weekly for three months* thereafter.

With streptomycin added to our armamentarium and knowledge of this disease being disseminated more widely the problem of granuloma inguinale is nearer resolution. This is not a common disease, but those few individuals so afflicted deserve more energetic and conscientious treatment and a better prognosis than heretofore they have been able to obtain.

SUMMARY AND CONCLUSIONS

The unfortunate state of granuloma inguinale cases is discussed, with emphasis placed on poor prognosis.

Practical methods of diagnosis are discussed.

The various forms of treatment are discussed, and the revolutionary aspects of streptomycin is the only really effective drug for the late stages of the disease.

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The Epidemiology of Brucellosis in Mississippi in 1946*

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Introduction:

IT TOOK MANY years and many investigators to clarify the problem of brucellosis after it was differentiated and identified as a separate disease in 1861 by Marston. The important work of the British Mediterranean Fever Commission is well known and recognized. The bacteriological aspects of the disease were clarified to a great extent by the Danish veterinarian, Bang (1897), who isolated the organism from aborting cows, by Traum (1914) in his studies on contagious abortion in pigs, and Evans (1918) in her studies on human beings, cows, and goats. Craig (1906) reported the first human case contracted in this county in 1906. Up until 1924 it was believed that the disease in the United States was contracted only upon association with goats, but in that year Keefer reported a case not of caprine origin. Since that time, cases have been reported in which the association was with cows and pigs, as well as with goats. We now know that the *Brucella* organisms can infect horses, sheep, dogs, domestic fowl, rodents, and possibly other wild animals. We know that man can become infected by consuming milk or other dairy products containing the *Brucella* and by coming into direct contact with tissues or discharges infected with these organisms.

In regard to brucellosis and its recurrence in Mississippi, it is interesting to note that Dr. T. M. Kemmerer, former Director of the State Hygienic Laboratory, commented in the State Board of Health biennial report for 1927-1929 that, "Undulant fever and tularemia are probably much more prevalent in Mississippi than is generally known. Information in regard to these diseases is being distributed to the physicians and they are being urged to send in blood in Keidel tubes from all cases of obscure fever, together with a brief history of the case so that the laboratory can make such tests as seem to be called for."

Dr. Kemmerer stated in his 1929-1931 report that twenty-six cases were proved to be undulant fever and about an equal number were "suspicious" of 1,154 tests made on human sera for brucellosis. He stated further that "the majority of cases of undulant fever are in handlers of animals and meat products and very few cases in consumers of milk."

The following serological agglutination reports were made by Dr. Kemmerer and Dr. H. C. Ricks in their biennial reports.

TABLE I

Serological Agglutination Tests for Brucellosis in Man

Year	Positive	Negative	Total
1929-31	26	1,128	1,154
1931-33	48	1,633	1,681
1933-35	21	1,928	1,949
1935-37	46	8,267	8,313
1937-39	31	8,342	8,373
1939-41	85	9,185	9,270
1941-43	86	8,825	8,911
1943-45	173	9,328	9,501

TABLE II

Annual Morbidity Data on Undulant Fever

Year	White	Black	Total
1931	2	1	3
1932	8	2	10
1933	9	4	13
1934	3	0	3
1935	10	4	14
1936	20	1	21
1937	17	6	23
1938	28	4	32
1939	19	6	25
1940	28	2	30
1941	23	5	28
1942	21	6	27
1943	40	2	42
1944	38	7	45
1945	90	10	100
1946	117	16	133

In the June, 1932, issue of *The Mississippi Doctor*, Doctors Otis S. Warr and Henry B. Gotten of Memphis, stated in an article on "Undulant Fever" that before 1928 there were two cases in Mississippi and in 1929, nine cases. Their concluding statement was, This report of seven cases does not warrant any conclusive data, but does call attention to the presence of undulant fever in the Tri-States (Arkansas, Tennessee, and Mississippi.)"

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The following data on the incidence of brucellosis are compiled from the county health officers' morbidity reports.

While these data indicate an increase in brucellosis, it is not certain whether this increase has resulted from an actual increase in the prevalence of the disease, or from better recognition of the disease by physicians, or from better morbidity reporting by the physicians over the state.

BRUCELLOSIS IN CATTLE:

The incidence of brucellosis, or Bang's disease, in cattle has never been accurately known in Mississippi. Since 1929, however, the State Hygienic Laboratory has coöperated with the State Livestock Sanitary Board in performing agglutination tests on cattle sera to determine infections in cattle. From the biennial reports of the Director of the State Hygienic Laboratory the following data were obtained.

TABLE III

Serological Tests for Brucellosis in Cattle

Year	Number Serological Tests	Number Positives	Per Cent Positives
1929-31	1,563	243	15.54
1931-33	20,496	1,080	5.27
1933-35	20,762	1,562	7.51
1935-37	41,784	1,882	4.51
1937-39	42,579	1,309	3.07
1939-41	45,372	1,628	3.59
1941-43	50,603	2,433	4.81
1943-45	24,415	1,350	5.53

These tests were made on cattle intended for interstate shipment.

The Bureau of Animal Industry in coöperation with the State Livestock Sanitary Board has been conducting a Bang's disease control program since July 1, 1934. In this program blood samples are obtained from cattle and those showing a positive agglutination test with Brucella antigen are regarded as reactors. These reactors are considered infected animals and removed from the herd. The animal owner is indemnified for a certain percentage of his financial loss. The following figures on the incidence of Bang's reactors were obtained from the Bureau of Animal Industry reports.

TABLE IV

Serological Tests for Brucellosis in Cattle

Year	No. Cattle Tested	Number Reactors	Per Cent Reactors
1941	91,830	1,858	2.02
1942	57,534	1,237	2.15
1943	54,950	1,225	2.23
1944	47,924	1,455	3.03
1945	79,155	3,677	4.02
1946	43,906	1,811	4.12

Part of the figures of Table III are in the figures of Table IV.

From these data it is apparent that there has been a slight increase in the incidence of brucellosis in cattle. This fact is corroborated by various veterinarians. The reasons for the increase in Bang's disease will be discussed later.

1946 SURVEY:

In order that more information might be known about brucellosis in Mississippi an effort was made to contact the physicians reporting the disease, and all the patients reported in 1946. The primary purpose of this work was to establish if possible the probable source of infection and prevent the further incidence of the disease. At the same time other information was asked of the physician and the patient in order to get a complete epidemiological picture.

Clinically, brucellosis exhibits itself in two phases—acute and chronic—which tend to overlap occasionally. The acute phase is of relatively short duration and is identified by a pattern of symptoms resembling those of acute respiratory infections. Indeed the disease is often diagnosed as "influenza" and "virus pneumonia." It is also frequently diagnosed as "malaria" and "typhoid fever" until a positive agglutination report comes from the laboratory. The onset of the disease may be sudden or insidious. Frequently the patient has chilly sensations during the period of invasion. Frank chills may develop followed by a fever and drenching sweats. In the majority of cases the chill, fever, and sweats occur in the late afternoon, evening, and night. The patient often requires a change of night clothes and occasionally a change of bedding. There is severe headache associated with the febrile period. The patient is left greatly exhausted by the fever and sweats so that weakness is an outstanding complaint. There are varying degrees of anorexia and many patients lose weight during their acute illness. Nuchal pain, backache and joint aches are frequent complaints of patients. Painful swelling of the testicles has been reported by some authors but we have not encountered this symptom in any of the series of patients surveyed.

Quite a few of the patients have complained of various forms of abdominal distress, as expressed by "indigestion," "upset stomach," "vomiting," "food disagreed with me," etc. Some patients complained of diarrhea and others of constipation. Neurologic disorders may be evident in the form of increased restlessness and irritability, and if the disease continues mental depression may set in.

In a large number of the cases the patients did not become acutely ill until one, two, and sometimes four months had passed of poor health. Self-medication was frequently tried, using quinine, atabrine, and various proprietary medicines. Not a few of the patients continued to work despite a low-grade fever and ill-feeling, or these patients went to bed for only a few days. Many of the patients had high agglutination titres. Two seventeen-year-old boys played football during their infections as demonstrated by titres of 1:20,480 and 1:10,240. It is probable that there is a large group of people who become infected with *Brucella* and in whom the host-parasite relationships are so balanced that the resistance of the host is able to overcome the virulence of the parasite so that there is little or no clinical evidence of disease. It may be that a high agglutination titre is evidence of strong host resistance. However, we have data on some acutely ill individuals who developed high agglutination titres. It is well known that some strains of *Brucella* have greater antigenicity than others. It is likely that this factor is responsible for some of the variation in agglutination titres. The whole problem of virulence and resistance, and antigenicity and immunological response is too complex and variable to be discussed here.

Chronic brucellosis is a most difficult disease to recognize and diagnose. The patient's complaints are many and vague so that an impression of psychoneurosis is easily gained. These patients, however, are sick. Weakness and chronic fatigue are the commonest complaints. Headaches, low-grade fever, aches and pains are often mentioned. Nervousness, emotional instability, and mental depression are readily observed.

In many instances it is difficult to differentiate a chronic case from an acute case. In making a study of this problem Spink (1946) divided his cases on the basis of duration and more or less arbitrarily defines the chronic case as one in which the patient has manifestations of the disease for three months or longer. By using this classification and realizing its shortcomings we find the following:

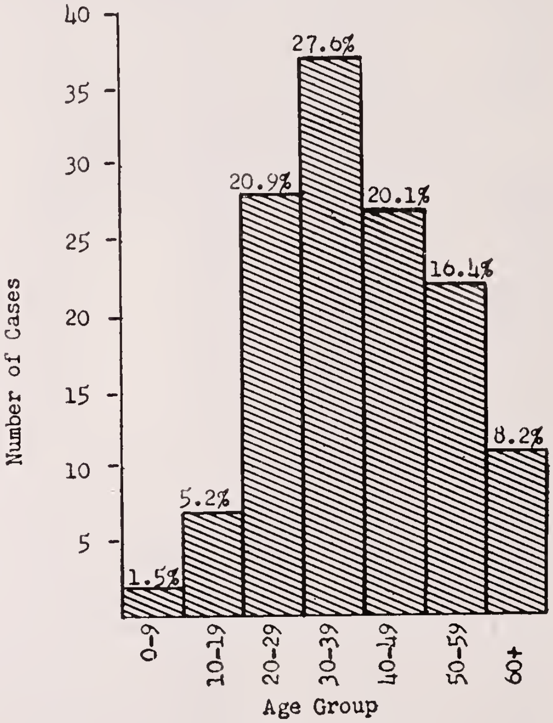
Total	Acute	Chronic
134	89 or 73.1%	36 or 26.9%

It is likely that not many cases of acute brucellosis were erroneously diagnosed as a positive agglutination test easily confirms the suggestive clinical symptoms. But the problem of chronic brucellosis is another matter. Because of the difficulties of diagnosis, just what the true incidence of this disease is will probably never be known. In view of the large amount of raw milk that was consumed in the state for many years, it is not unlikely that chronic brucellosis is more prevalent than the figures indicated by this year's study.

An age distribution chart of the 134 cases studied this year reveals the following data.

TABLE V

Age Distribution



The low incidence of the disease in children is in keeping with what has been reported by Spink and Hall (1945) and others. Indeed there was some doubt as to whether the two children reported as having brucellosis really had the disease.

According to the data obtained this year the disease is more prevalent in men than in women.

TABLE VI

Sex Distribution

Male	Female	Total
84 or 62.7%	50 or 37.3%	134

The greater prevalence of the disease in men very likely represents their greater exposure to infection as a result of handling livestock.

The white race was reported with the disease much more frequently than the colored race. The race distribution on the 134 cases was as follows:

TABLE VII

Color Distribution

White	Colored	Total
119 or 88.8%	15 or 11.2%	134

It is impossible to state at this time what this increased prevalence among the white population is due to. Several factors are involved. It is probable that there is more milk consumed among the white people than among the colored. It is also probable that more white families own cows than colored families. This increased exposure as a result of drinking more milk and having more livestock may explain the greater incidence of the disease among the white people. It is also probable that the colored people would seek medical attention less readily than the white people. We have seen no data indicating there is a racial immunity against the disease among the colored people.

The diagnosis of brucellosis is frequently made with the aid of the laboratory and with the aid of skin tests. In histories obtained on 125 patients it was found that the skin test was used on 19 or 15.2 per cent of the patients and serological agglutination tests on 106 or 84.8 per cent of the patients.

The following serological titres were developed by the patients:

TABLE VIII

Agglutination Titres

Serum Titre	1:80	1:160	1:320	1:640	1:1280	1:2560	1:5120	1:10240	1:20480	1:40960
No. of Cases	10	18	27	36	13	18	14	4	4	1

There did not appear to be any correlation between the severity of the illness and the dilution to which the serum agglutinated. The chronic cases of long duration seldom agglutinated in dilutions above 1:160. Indeed many chronic cases failed to agglutinate at all.

It has long been recognized that brucellosis is a hazard associated with certain occupations. The following data were compiled from the cases interviewed in 1946:

TABLE IX

Occupational Distribution

Occupation	No. Cases	Per Cent
Housewife, rural	10	7.5
Housewife, urban	25	18.6
Farmer	29	21.6
Dairyman	11	8.2
Butcher and Animal Products Handlers	5	3.7
Factory Employees	13	9.7
Private Business Men	31	23.1
Food Handlers	1	0.7
Preschool Child	1	0.7
Students	5	3.7
Unemployed	3	2.2
Total	134	

In an agricultural state like Mississippi it is not difficult to understand and explain the high percentage of cases among farmers and dairymen who frequently come in contact with livestock, some of which may be Bang's infected.

The housewife is differentiated as urban and rural because many rural housewives do many chores like milking, which brings them into direct contact with livestock. Because of this it was believed that the percentage of infection in this group would be greater than in the urban group. The reverse situation is true however. The high percentage of cases among urban housewives may be explained by two facts. First, there were two urban outbreaks traced to raw milk in which several women were involved. Second, it is quite likely that urban women visit a physician more frequently with their complaints than do rural women. Many more urban housewives were diagnosed with chronic brucellosis than rural housewives.

Private business men and factory employees form a large percentage of cases not by virtue of their contact with livestock but because of two urban outbreaks traced to raw milk. It is also likely that their source of milk is more varied and consequently their exposure to infections is probably greater.

namely hemorrhoids, fistula in ano, fissure in ano.

HEMORRHOIDS.

Very few individuals pass through life without some discomfort due to this condition. The American habit of self-medication with laxatives and cathartics, plus the occurrence of diarrheas, the purgation in treatment of various illnesses, the trauma of occasional constipated stools, the engorgement of the rectal vessels due to pregnancy and childbirth or pelvic tumors, and the venous engorgement due to cardiac disease, make it unlikely that many should escape having hemorrhoids at some time during life. Most of these occurrences subside with only minor discomfort but some persist. Their persistence does not immediately make them necessarily surgical. The use of bland diet, mineral oil and the warm Sitz bath is capable of affording relief to many of these.

It is only when the hemorrhoids persist and begin to cause increased discomfort over a long period of time that the patient usually consults a physician and relates his train of symptoms. At this point it is mandatory for the physician to examine the patient thoroughly to determine the cause of the trouble. He is no more justified in accepting the patient's diagnosis of "piles" than he would be in accepting the patient's diagnosis of a cough as 'pulmonary tuberculosis." Examination should disclose whether or not the patient has hemorrhoids; whether they are internal or external or combined; whether they are mild and amenable to non-surgical treatment or requiring surgery; whether they are thrombosed or complicated by fistula, fissure, or abscess. The examination should include a digital examination of the rectum and a proctoscopic view for the presence of hemorrhoids or even fistula does not preclude the existence of a malignancy above the anal margin.

The examination may disclose hemorrhoids or not or may disclose other pathology. But provided hemorrhoids alone are present the first thing to decide is whether they are mild and can be conservatively treated or whether they require surgery. It is well to mention at this point that hemorrhoids during later months of pregnancy seldom require surgery and in many cases they entirely disappear following delivery. Again poor results are to be expected in a patient suffering from prostatic obstruction or venous stasis as the result of cardiac disease. Likewise the removal of hemorrhoids rarely gives good results in the presence of a severe rectocele. The rectocele should be repaired either previously or at the time of the hemorrhoidal operation.

Having decided that surgery is necessary there is room for a mistake about the time of the operation if there is severe thrombosis present. Emboli are possible from operation is this field and are more frequent when large thrombotic and inflated hemorrhoids are operated upon and in addition such emboli are more dangerous because infected. It is sometimes wiser to treat the condition for a period to obtain subsidence of inflammation before operating, even splitting thrombosed hemorrhoids and evacuating the clot for relief of pain during the pre-operative period. Hemorrhoidectomy is rarely an emergency and time spent in preparing the patient for a safe operation in order. This may be forcibly impressed on one if he sees only once some unfortunate with pyema from operation on thrombosed hemorrhoids.

It goes without saying that the bowel should be thoroughly cleansed before operation, yet numerous cases are on record of unfortunate results post-operatively from neglect of this pre-operative care.

The type of anaethesia used will depend upon the preference of the individual surgeon. My own preference after using sacral anaesthesia for a time is a low spinal but good results are achieved by other types of anaesthesia. The position of the patient during operation is important. The prone position of the patient during operation is important. The prone position with the hips elevated gives the best exposure of the operative field, with the Sims position holding second position. It is certainly most difficult to obtain a satisfactory exposure in the lithotomy position.

The type of operation will vary with the operator but regardless of the type of operation there are certain essentials in any satisfactory hemorrhoid operation. They are: 1. The hemorrhoids must be removed. 2. Hemorrhage must be completely controlled. 3. The suture lines must be parallel with the long axis of the gut. 4. The operation must be so planned and so performed as to prevent formation of a strictured or too tight introitus. All four of these essentials are not infrequently violated. Another important but not essential point is to plan the operation so as not to leave skin tags. They are not clinically important but they do cause the patient to feel that his operation was not a complete success.

The majority of hemorrhoids that come to surgery are of the combined internal and external type. In these cases Buie's operation has given the best results in my hands. It provides drainage and does not leave skin tags.

The after care of hemorrhoid cases is important. It is essential that the bowels be kept locked for a period to allow for a certain amount of healing before being subjected to a bowel action. The length of this period will vary with the preference of the surgeon. The frequent use of the hot Sitz bath is a great aid in the comfort of the patient and in early healing of the wound. Examination by the gloved finger to be assured that no stricture is forming is essential in convalescence.

Even to mention these things before a body of surgeons sounds pedantic and arising out of the superabundance of the author's ego. They are mentioned because both you and I can quote numerous cases where such fundamentals were neglected. I can remember having to treat a severe hemorrhage from the rectum some forty-eight hours post-operative which was the result of a large dose of Epsom salts given on the second day post-operative to a constipated patient. The resulting bowel action proved disastrous and the operator was happy to unload this patient upon me. I am sure that many of you can recount similar occurrences.

The aftercare of the hemorrhoidectomy case is very important. The public is aware that much discomfort frequently follows this operation and the patient is apprehensive. I wish to mention a few points which certainly add to the patient's comfort. First is the avoidance of any form of packing of the wound area, if possible. Anything which extends through the anal sphincter when this area is irritated causes spasm of the sphincter and much pain. The use of a tube with the object of allowing relief of gas causes much more discomfort than it relieves. All surgeons are not in agreement on this point but the majority follow this view. Second, avoid catheterizing if possible. It is safe to allow the average male to stand up to void and this may help. The use of a warm Sitz bath with instruction to void in the bath also is a frequent help. Third, the use of Sitz bath for comfort. Fourth, the use of an oil enema given through a small rectal tube or catheter makes the first bowel action far more comfortable.

FISTULA IN ANO

A didactic paper on this subject before a body of surgeons is unjustified unless the author has something new to offer, if it were not for the fact that the ensuing publication is read by others than surgeons. I have nothing new to offer and do not intend to discuss the subject at all fully. It is certainly not necessary to tell surgeons that anal fistulas are not simple things. They have already found the opposite true too many times. But the practitioner or the young man in surgery may have to learn this the hard way. Total or partial bowel incontinence as result of fistula operations is not unknown and if it ever happens in one of your cases you will never be allowed to forget it. Failure of cure in the primary operation is frequent in multiple fistulas and may require several operations for cure. I wish merely to list some of the fundamental rules in surgery of this condition observance of which is essential for safe and satisfactory results.

1. The patient's bowels must be properly prepared preoperatively exactly the same as the preparation for hemorrhoidal operation.
2. It is necessary to determine the type of fistula preoperatively if possible. An external fistula (better called an external sinus) does not require section of the sphincter. An internal fistula (or internal sinus) is really an abscess external to the rectum and communicating with it by a small opening usually above the sphincter internus. It is not necessary to cut the sphincter in these cases.

   In multiple fistulas the openings of the external sinuses may be numerous and some of them high on the buttock, over the pubis or well down the thigh. The injection of bismuth paste, or lipiodol followed by x-ray may greatly aid in tracing the tracts. In event the patient has pyuria or bladder or urethral complaints, methylene blue injected into urethra or bladder may quickly inform you that a tract communicates with either the urethra or bladder. These cases are dif-

	Date	Result
	11-11-46	1:20480 Tularemia
		1:320 Undulant
CAJ		
	11-11-46	1:2560 Tularemia
		1:320 Undulant
	Date	Result

Another patient, a white man giving history of tick bite and diagnosed as tularemia, showed the following agglutination reactions:

8-1-46	1:640 Tularemia
	1:640 Undulant
8-5-46	1:1280 Tularemia
	1:640 Undulant
10-13-46	1:10240 Tularemia
	Neg. Undulant

It is believed that the patients were suffering from tularemia and that the undulant fever agglutinations developed either as an anamnestic reaction to a previous infection with *Brucella* or as a true cross-agglutination.

We have not had any veterans who had received cholera vaccine while in the service give a positive agglutination to *Brucella* antigen.

The control of brucellosis in man is to a large extent involved with the control of Bang's disease in cattle. As long as a reservoir of infection among cattle remains we can expect to find infections arising in people who come into contact with these cattle. In a state as largely agricultural as is Mississippi it is not surprising that about thirty per cent of the cases of brucellosis occurred among farmers and dairymen alone. It is not surprising that over one-third of the cases resulted from contact with infected tissues although the consumption of raw milk could not be entirely discounted. In view of these facts it is apparent that a strong Bang's eradication program is needed. Yet the incidence of Bang's disease in cattle appears to be on the increase. From our own observations and those of veterinarians this increase seems to be due to the increased sales of livestock. Many auction barns have sprung up all over the state. Cows are bought and sold without being Bang's tested. Many a livestock dealer has sold a cow as a good milk cow even though he knows the cow aborted recently. A cow sold for its milk brings in a far better price than the same cow sold for its beef. An educational program is needed to inform the farmer and dairyman about the dangers of Bang's disease. Legislation is needed that will require each cow to be Bang's tested at the time she is sold.

The greatest percentage of our brucellosis occurred from the consumption of raw milk and raw dairy products. Most of these cases occurred in cities where raw milk came from Bang's infected herds. These cases of brucellosis can be prevented if cities will pass ordinances requiring the pasteurization of all milk sold at retail. We realize that this is easier said than done. Too many communities are faced with milk shortages. Pasteurization equipment was scarce during the war years. However, with the gradual return of a larger milk supply and more pasteurization equipment, every city should consider the passage of ordinances requiring pasteurization of all retail milk. We have found the public generally enthusiastic about such legislation once the dangers of raw milk were made known to it.

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Rectal Diseases*

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THERE IS NO field in surgery in which so many unsatisfactory results occur as in the treatment of rectal disease. The reasons are multiple but it may be well to list a few that play important roles:

1) Insufficient training in medical schools and hospitals in this field of medicine, 2) neglect of examination or incomplete or careless examination, 3) the fact that the general practitioners and young doctors with a minimum of training and experience feel perfectly competent to treat all rectal conditions, and 4) the development of fads in treatment of rectal conditions "without use of the knife."

It is necessary to elaborate to a certain extent upon the statements in the preceding paragraph since the general trend of this paper is aimed toward possible corrections.

1. Insufficient Training. A minimum course of lectures and demonstrations in proctology is the rule in most medical schools. The student is not sufficiently impressed with the fact that during life very few individuals escape development of major or minor rectal complaints. Regardless of the zeal and ability of his teachers the student has difficulty overcoming the lay idea that the rectum is a dirty area and treatment of rectal trouble simple and easy, but dirty and uninteresting. When a choice offers between a clinic by Dr. Smith on rectal disease or another by Dr. Jones on major surgery of the abdomen, chest, or brain, there is little doubt about which clinic he will attend.

This same attitude continues on in the internship. The average interne avoids if possible assisting Dr. Smith in surgery of the rectum and is not particularly interested in following the after care of his cases, but will break his neck trying to obtain the privilege of acting as second or third assistant and holding a retractor for Dr. Jones in major surgery. And the chances are that this same interne will in his future practice treat hundreds of rectal cases and may never be called upon for gastric or colonic resections. The label of "minor surgery" is plastered on the teaching and treatment of most rectal disease and someway or somewhere it is up to our medical schools and hospitals to impress the students and interns with the fact that while the conditions may usually be "minor" as regards risk to life, they are "major" in their effect upon the life and happiness and comfort of the patient.

2. We all know that the doctor with limited or no training in surgery other than a brief internship feels perfectly competent to treat hemorrhoids, fistula, fissure in ano. He usually does not have the same temerity in doing abdominal surgery, possibly because he realizes that mistakes here may result in a fatality. The fact that rectal surgery is not simple, does require surgical training, and that mistakes that may make the operation a failure, or may wreck the patient's future comfort are easily made. Poor rectal surgery is worse than no treatment.

3. Incomplete Examination. There is no surgeon who has practiced long in Mississippi without accumulating a list of unfortunate rectal cases that came to him with hopeless rectal or sigmoidal carcinoma as the result of careless or complete rectal examination. Rectal discomfort, chronic diarrhea, or rectal bleeding are danger signs and call for thorough examination. There is no need to elaborate this point further.

4. For some reason many fads, some of them verging on quackery, have developed in the treatment of rectal disease. Probably the chief reason has been the fact that treatment furnished by the average doctor and many surgeons has been unsatisfactory to the patient and the second reason being that the fear of surgery has given the border-line practitioner a talking point. To take one method of treatment as an example we might select the injection treatment of hemorrhoids. This method in competent hands is useful in treatment of internal hemorrhoids but in unskilled hands is disastrous and even fatal. I have seen three deaths as result of such treatment. The only method of correction that offers hope is a general improvement in the type of care furnished these cases by the profession at large.

It is intended to limit the scope of this paper to a consideration of the pitfalls in the care of the more common rectal complaints,

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The primary purpose of collecting epidemiological data on brucellosis is to establish the source of infection and prevent other infections from occurring. The following data as to probable source of infection were obtained from the histories given by the patients:

TABLE X

Source of Infection

Source	No. Cases	Percentage
Raw milk	64	47.8
Raw dairy products	2	1.5
Unknown, probably raw milk	11	8.2
Raw milk and contact	47	35.1
Contact only	4	3.0
Unknown	6	4.5
Total	134	

From these data it is evident that raw milk infected with *Brucella* was the major source of infections. Raw milk—even Grade A raw milk which requires the herd be Bang's tested semiannually—is still a public health problem. While the State Board of Health has supervision of milk it has no direct supervision of livestock. Even when milk herds are Bang's tested semiannually cows do become infected in the interval between tests and give off *Brucella* in their milk before a blood test finds them infected. The State Board of Health is advocating pasteurization more and more because the present measures against Bang's disease in livestock are not adequate in protecting the consumers of raw milk. A large number of the cases who acquired their infection from raw milk were residents of two cities in which we had outbreaks. Both communities have since passed ordinances requiring the pasteurization of milk sold for retail purposes.

Another large proportion of the cases were classified as having acquired their infection from "raw milk and contact." In this category is the infection by contact with infected tissues and discharges. But this group also drank raw milk from cows with histories of abortion or positive Bang's tests. It is impossible to state definitely that the infection was acquired by contact or by drinking raw milk, therefore the two possibilities are combined as one. It is our impression however that contact probably played the more important role for frequently the onset of the disease came after a history of removing the retained placenta following an abortion, disinfecting the cows after calving, or other such handling of infected livestock.

COMMUNITY OUTBREAKS:

During 1945 and 1946 four cities had outbreaks of brucellosis. At New Albany thirteen cases developed among consumers of Grade A raw milk and milk products originating from a dairy in which one-third of the cattle were Bang's reactors. Yazoo City had a similar outbreak when six cases occurred among Grade A raw milk consumers. At Natchez eighteen cases of brucellosis developed in raw milk drinkers. Most of these cases occurred in a large factory that sold ungraded raw milk to its workers in its cafeteria. The dairyman that sold milk to this plant knew that many of his cattle were infected with Bang's disease. Public sentiment brought the City Council to pass a law requiring all retail milk sold within the city to be pasteurized. Five cases of brucellosis investigated at Hattiesburg gave histories of drinking raw milk from one dairy in which twenty-one cows were definite reactors and suspects to the Bang's disease test.

Community outbreaks of brucellosis can be stopped if the community will pass a law requiring the pasteurization of retail milk. The present requirements for Bang's testing do not give adequate protection to raw milk drinkers. The present program for Bang's disease eradication in livestock is progressing too slowly to protect raw milk consumers at present and in the near future. By advocating pasteurization we feel that we are in no way deprecating the Bang's eradication program. As a matter of fact we advocate its continuance and extension for it is only by this program that we believe protection can be given to dairymen, farmers and other livestock handlers who acquire their infections by contact in the great majority of instances. But for the protection to the urban consumer of milk we advocate pasteurization because results can be gained as soon as pasteurization is instituted. Eradication of Bang's disease in a herd may require years with the possibility of reinfection of the herd always present.

DISCUSSION:

In keeping with what has been found by other investigators (Spink, 1945; Dietrich and Bonynge, 1932), the incidence of brucellosis in children was very low in Mississippi in 1946. Only two children were reported with the disease. Even though children are probably the greatest milk consumers, and therefore as a group are exposed to infection through milk more than any other age group, it is surprising that a greater percentage is not infected. It has been generally assumed that children are resistant to *Brucella* infection. The nature of this resistance is unknown. It is our belief that sexual maturity has much to do with success or failure of the infection. It is known that *Brucella* have a predilection for reproduction tissues.

Brucella infections in lower animals, particularly cows and pigs, result in spontaneous abortions. In view of this fact several workers (Carpenter and Boak, 1931; Calder, 1939; and Spink and Hall, 1945) have reviewed and investigated unexplained abortions in human beings. A few cases have been authenticated by isolating *Brucella* from either the fetus or the placental tissues. In the series of cases investigated by us we found one woman diagnosed as having chronic brucellosis who gave a history of four pregnancies, the first three of which were unsuccessful. During her fourth pregnancy she remained in bed all of the time. This woman gave a history of having been raised in a dairying family, drinking raw milk and handling livestock. The herd became infected with Bang's disease and the business was eventually abandoned. Upon her marriage she and her husband started a dairy. Their herd became infected. Her husband became infected. There is little doubt from her history that she had long association with *Brucella*. She was not diagnosed as having brucellosis until 1946 although she had been unwell for years. No bacterial cultures had been made on any of the fetuses or placental tissues.

We also have a history of one woman who became acutely ill with brucellosis during her pregnancy. She was kept in bed and delivered a normal baby at term. We should like to see the physicians check their obstetrical cases with blood tests not only for syphilis but for brucellosis as well. And in cases of unexplained abortions a bacteriological test should be made of the fetus and placenta for *Brucella* and an agglutination and skin test of the patient for positive reactions.

A problem of brucellosis that has perplexed some investigators is that of multiple infections in families. It has been difficult to explain why only one or two members of a large family will become infected with *Brucella* when all members of the family have been using only one source of milk, or when all members have been equally exposed to the infection. This year we found the mother and father of a family of eight people come down with brucellosis within two months of each other. This family drank raw milk from a dairy known to have Bang's disease in its herd. Unpasteurized butter was also used by the family. The family also milked a goat for some months without knowing the status of this goat in regard to *Brucella* infection. The goat died shortly after the family stopped milking it. Blood tests were made on the five children and grandmother after the mother and father became sick. None of these individuals were positive by agglutination tests, nor did they complain of illness.

Blood tests were made on eight families in which only one individual in each family was sick with brucellosis. The agglutination tests did not reveal any other positives in those families even though the individuals were exposed to almost the same extent. We were unable to determine what factors were involved in the acquisition of the infection although it seems evident that these factors lie within the host and not the parasite.

One case of undulant fever diagnosed in 1946 gave the following history of the disease in his family. A brother developed brucellosis in the fall of 1939. The cows were tested and one was found to be a Bang's reactor. A few months later the mother was positive. Then about a year or more later a younger brother who was teaching near Andalusia, Alabama, developed it. Then a few months later a sister in Meridian had it. It is probable that these five members of one family acquired their infections from the same sources and that the onset of each member was long and insidious.

It has been known for some time that *Brucella* antigens will cross-agglutinate with antibodies developed in tularemia infections and cholera vaccinations. There appear to be common antigens in the bacteria of the genera *Brucella* and *Pasteurella* and the vibrio of *Cholera*. The laboratory has reported cross-agglutination on several occasions during 1946. The following examples may be cited: Two Negroes, a mother and a son, who caught, skinned and ate a rabbit, developed an acute febrile illness. Their bloods had the following agglutination reactions:

Name	Date	Result	
LJ	8-29-46	1:1280	Tularemia
		1:640	Undulant

ficult enough when we have all the information we can obtain.

3. Pulmonary tuberculosis is not as frequent a cause of fistula as was once supposed but it is frequent enough to be considered. However, tuberculosis is not a contraindication to surgery of the fistula. The treatment is identical except that the general condition of the patient must be considered and regional anaesthesia is mandatory.
4. At operation all sinus tracts must be laid open and the tract either excised or curetted and packed. The opening or openings into the gut must be found and all tissue between the internal opening and the skin severed.
5. The sphincter must not be cut but once. If unable to open all the sinuses without cutting the sphincter more than once, then a second or even third operation must be planned to be performed after complete union of the sphincter has occurred. To sever the sphincter twice at one time will in all probability result in complete and possibly permanent loss of control.
6. Regardless of the direction of the external sinus tracts, the eventual incision through the sphincter must be at right angles to its fibres. A diagonal incision accomodating itself to the external sinus will result in prolonged incontinence, incomplete healing of the sphincter fibres and possibly a permanent partial or complete incontinence.
7. During convalescence it is necessary to make sure that the incisions heal from the bottom of a V-shaped trough and that the skin and mucosa do not bridge across reëstablishing the sinus or that the mucosa does not dip down and heal over the divided edges of the sphincter.
8. Do not be too confident that because there is only one external fistula opening you are dealing with a simple complete fistula. The external opening may be single and there may still be branching tracts.

FISSURE IN ANO

This is a painful condition, all out of proportion to the size of the lesion. At the time we see the patient, the condition has usually existed for some time and the patient has become nervous and apprehensive and actually dreads a bowel movement and complains bitterly at examination. Treatment except excision has rarely been successful in my hands. Excision with the incision extending well out into the skin margin exactly like a hemorrhoid excision, with the use of Sitz bath postoperative usually gives excellent results. Be sure in these cases to give an oil enema through a small catheter when it is necessary to open the bowels as these patients are very apprehensive in regard to this first postoperative bowel action. The cured fissure case is always a most grateful patient.

The medical profession as a whole is not sufficiently conscious of the importance of thorough examination in cases of rectal complaints. Errors are probably more frequent in treatment of these conditions than in treatment of other surgical conditions. More training in this field should be given in our medical school and hospitals, if the profession is to avoid the competition of "twilight zone practitioners" in treatment of rectal complaints.

DISCUSSION

E. E. Benoist, M.D. (Natchez)—What actually seems to bring the patient to the doctor for treatment of hemorrhoids is primarily pain. Next in order is the presence of bleeding, which fact produces fear. Here arises the necessity of thorough examination as stressed by Doctor Ewing. I am glad that he has called attention to the fact that hemorrhoids arising in the latter months of pregnancy rarely come to operation and that rectocele itself should be taken care of along with hemorrhoidectomy, or beforehand. The presence of inflammation before operation is, in my opinion, a definite contraindication to operation at that time, with the possible exception of the release of a clot from a thrombotic hemorrhoid. When I was a student, one of the prominent surgeons of the school faculty had a death from pyema and liver abscess following hemorrhoidectomy done on one of his patients.

In regard to anaesthesia in hemorrhoidectomy, it has been my custom to obtain some kind of nerve block in all operations, either sacral block, low spinal, or local anaesthesia associated with general anaesthesia. I have never felt that general anaesthesia was satisfactory alone, because the anal sphincter is last, or among the last, muscles in the body to relax under an anaesthetic. And it is not safe to push a general anaesthetic to the point of complete relaxation of the sphincter. In my practice, I prefer, as does the essayist, the prone position for operating. I do not use the Sim's position, but do occasionally use the lithotomy position, even though it is not the perfect exposure. As to technic, I also am a follower of the Buie-Smith school. Likewise I do not place a tube into the rectum after operation, but instead, usually apply some preparation as sulfathiazole ointment. Later heat is depended upon largely to furnish relaxation of spasm. In 100 per cent of my cases I plan to carry dilatation of the sphincter as soon as the patient's condition permits. This is carried on for several weeks.

In fistula operation, the prime necessity is, as I see it, a question of exteriorization. The fistula starts as an ulcer in an anal crypt just within or at the external sphincter. I have tried to cure these by leaving the sphincter entirely uncut, but in such cases have to go back again. No matter how deep the fistula may ramify, it has been my experience that the origin has been close to the anal outlet. The worst that I have seen did not come to operation. It involved the whole gluteal region of an emaciated individual, with multiple openings out beyond the ischial tuberosities. The worst that I have had come to operation was a fistula which pointed in the inguinal region and which had its origin in the posterior segment of the anus. This patient was cured by surgery.

Doctor Ewing has brought out the salient points about fissure. The one thing that he has emphasized about these cases is that the pain is all out of proportion to the size of the lesion.

Dr. S. S. Kety (Picayune)—Dr. Ewing has presented an excellent paper. There is no one method that is suitable for all hemorrhoidectomies and yet I know of no other field of surgery so abused because usually a surgeon has one and only one method he prefers for this type surgery. For this reason I wish to bring to your attention the Fansler method for hemorrhoidectomy which I used in 960 cases in the army and in civilian life.

The one disadvantage of this method is that one must have a Fansler proctoscope. For without it, one cannot use his method. The Fansler proctoscope is a fenestrated "scope" approximately 3.5 cm. in width and 6.5 cm. in length with a removable obturator. The patient is placed in a sitting position and a spinal anesthesia using 60-75 mg. of procaine is given. The patient then remains seated for two minutes and afterwards placed in a prone position for the hemorrhoidectomy. No dilation of the oral sphincter is necessary as there is gentle dilation with introduction of the scope. The obturator is removed, the hemorrhoid falls into the 'scope and may be visualized in its entirety. A suture of plain "O" catgut is placed at the superior extremity of the hemorrhoid tied and left long. An incision is made over the mass and by sharp dissection the mass is removed down to the pectinate band which may be recognized by its gleaming white fibers. The incision is then closed with a continuous suture, leaving a small opening in the inferior portion for drainage.

This method gives complete hemostasis and no packs are necessary. Then too, because of the size of the 'scope, one cannot close too tightly and the patient cannot develop a stricture.

Dr. V. B. Philpot (Holly Springs)—There is one symptom that follows surgical procedures of the anorectal region that has not been mentioned so far and which, I think, deserves our consideration; that is, pain sometimes lasting two or three days and requiring at times plenty of narcotics.

Now, this pain can be eliminated by the injection of a combination of local anesthetic agents in oil some little distance from the anal canal, and encircling this canal completely, and extending deep enough to block all nerve supply to this region. The exact formula I have in mind has, of course, a procaine base, and some two or three other local anesthetic agents in oil, and is known by the trade name of "trithesia." This agent or a similar one, properly administered, will in a great majority of cases eliminate the two or three days pain that usually follow operations around the anal canal.

I, therefore, recommend to those of you who have not used this little procedure that you do so, and you, and your patients especially, will be happy from the results.

The Symptomatic treatment of Severe Bronchial Asthma

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Vicksburg, Miss.

THE MOST IMPORTANT part of the treatment of bronchial asthma is to find and remove the cause. This may often be done when the asthma is of the "extrinsic" type—that is, the asthma of the younger age group, where the allergic character of the disease is clearly defined, and where there are other preceding or accompanying allergic disorders such as urticaria, atopic dermatitis or hayfever. In the "intrinsic" type of asthma—the kind usually found in the older age group—the allergic character of the disease is not clearly defined, and it may be that no allergy in the strict sense of the word exists. The sinus and nasal pathology so often found is usually concomitant rather than causative, and the evidences of pulmonary damage, such as emphysema, bronchitis and bronchiectasis are generally the result of the asthmatic process, rather than the cause. That intrinsic asthma may be true bacterial allergy is possible, and has been considerably debated, but we have no certain knowledge on the subject. The fact is that the cause or causes of intrinsic asthma are not often discovered. In any case, the immediate problem of the physician when he is called upon to treat bronchial asthma is to afford relief of the attack.

If the patient is promptly relieved by one or several injections of epinephrine and shows a tendency neither to recurrence nor to interval wheezing and cough, he is not really a therapeutic problem. There are some patients, however, who suffer from repeated and severe attacks of bronchospasm. The asthma may be of the extrinsic type; the patient may have had adequate allergic study and may be under allergic management, and yet have recurrent severe asthma. Or else, the asthma may be of the "intrinsic" type—pulmonary emphysema and bronchiectasis may be present—and the patient may be wheezy and distressed between the frequent acute exacerbations of his disease.

In either case, if the asthma is severe and intractable, it is a common occurrence that the patient responds less and less to the injection of epinephrine and finally becomes epinephrine fast. Such patients are severely ill, suffer a great deal, and may pass over into status asthmaticus. It is with the symptomatic treatment of this type of asthma that this paper is concerned.

Why some asthmatics become epinephrine fast is not accurately known. A partial understanding, however, may be obtained by considering the basic patho-physiology of asthma. The pathological changes involved are: 1) spasm of the circular muscle fibres of the medium and small bronchi, 2) edema of the mucosa of the bronchi, 3) increased production of mucus, leading in severe cases, to the formation of mucus plugs.

It has long been thought that the primary change is spasm of the muscle fibres. This, it was argued, would lead to bronchial narrowing, which in turn would lead to increased inspiratory effort. This increase in inspiratory effort produces a sort of sucking or cupping effect on the intrathoracic bronchi, leading to mucous membrane edema and increased production of mucus. The good effects of epinephrine by injection were thought to be due to inhibition of bronchospasm, with restoration of a patent airway. This concept, however, is not supported by consideration of the pharmacology of epinephrine. In the first place, asthma may be relieved by inhalation of epinephrine 1:100, which argues for a local effect on the bronchial mucosa. In the second place, when epinephrine is injected, other pharmacologic effects, such as pallor, tachycardia, and tremor generally appear first, before the asthma begins to subside. If epinephrine really produced relief by direct action on the muscular or neuro-muscular mechanism, we might expect relief to occur as quickly as the other pharmacologic manifestations. In other words, it would seem that epinephrine produces relief of mucous membrane edema rather than of bronchiospasm. This should not be surprising, since other allergic disorders such as urticaria, atopic dermatitis and hayfever, are characterized by

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edema. The time interval involved in relief of urticaria by epinephrine, for instance, corresponds very well with the time interval involved in relief of asthma by the same drug.

It seems more logical to assume that the primary change in bronchial asthma is edema of the mucous membrane, and that it is this edema which produces the bronchial obstruction. In severe asthma, then, spasm of the circular bronchial muscles would be expected to occur secondarily, along with increased mucous production. Since epinephrine would relieve only the mucous membrane edema, but not the bronchospasm, it becomes more understandable why patients with severe asthma may become epinephrine fast.

In severe or intractable asthma, it thus becomes of importance to produce relief of bronchospasm, and this may best be done by the use of aminophylline. The pharmacology of aminophylline is not certainly known, but it seems that the drug produces bronchiodilatation by direct action on the bronchial muscle that is, its action is not dependent on sympathetic stimulation or vagal inhibition. It is most effective in epinephrine-fast patients, and often restores sensitivity to epinephrine—two further observations which tend to corroborate the idea that epinephrine relieves only edema of the bronchial mucosa, but not bronchospasm.

Aminophylline was first used intravenously, and the discovery by Hermann and Aynesworth in 1937 that intravenous use of aminophylline would relieve asthma, should be considered a milestone in the treatment of asthma. Aminophylline may also be used rectally, and it exerts its bronchiodilatory action quickly and reliably in this way. The rectal administration has the advantages that side reactions are not as frequent, and the patient does not have to be hospitalized.

The technic is simple and readily mastered. Aminophylline powder, in the dosage of 8 to 11 grains, depending on the patient's weight, is dissolved in about one ounce of tap water. In children, proportionate doses are used, between 2 and 5 grains. The solution is then slowly instilled into the rectum through a soft rubber catheter, using an all glass syringe. The patient should be instructed to lie down for about forty-five minutes thereafter, until absorption has taken place.

In severe asthma, it is obviously not sufficient to relax the bronchial muscle once or even several times. A cumulative and repeated bronchial relaxation is desired. Treatment may be outlined as follows:

1. Aminophylline by rectum is used two to three times daily for about a week. Thereafter, it may be used once nightly for anywhere between two weeks and two months.
2. Epinephrine hydrochloride 1:100 may be used by inhalation once or twice daily. It should be discontinued as soon as possible.
3. Potassium iodide is of great value in liquefying tenacious sputum and promoting expectoration. In many cases, especially of intrinsic asthma, it seems to have almost a specific effect. The dose should be carefully individualized and may be from seven to twenty drops of the saturated solution three to four times daily.
4. In the severely ill patient, the giving of sugar, water and salt is important, as soon as the dyspnea has been sufficiently relieved. In the hospitalized patient, this should be given intravenously.
5. Sedation is at first necessary, but should be accomplished without the use of opiates, whenever possible. Great caution must be exercised with elderly debilitated patients, who have evidence of pulmonary emphysema or bronchiectasis. In such patients, a single injection of morphine or its derivatives may have disastrous consequences, by further depressing respiration, impairing intrabronchial ciliary activity, and perhaps acting as a vagal stimulant. The possibility of drug allergy should also be borne in mind. Therefore, the best sedatives to use are the simple salts, such as chloral hydrate, paraldehyde or the barbiturates. In younger patients, with no evidence of pulmonary damage, small doses of dilaudid may be used.
6. If the patient is hospitalized, various other measures are very useful, especially the administration of oxygen by tent. I prefer the tent because it provides good "air conditioning" and serves to exclude many inhalants such as pollens and dusts, which may be etiologically implicated.
7. Administration of helium and oxygen by helium hood is a most valuable measure in intractable asthma and in status asthmaticus. It is not, however, generally available, and requires trained personnel for its administration.

With the procedure outlined, many asthmatics secure good remission from their disease.

In many cases, the remission seems to last for weeks or even months. The treatment is purely symptomatic, of course, but the period of remission may be utilized to attempt to find and remove the cause of the patient's asthma.

Occasionally, in status asthmaticus, no medication seems to be of benefit. In such desperately ill patients, other measures may have to be used. Ether and olive oil, in the proportion of one ounce to two, may be instilled into the rectum. Once in a great while, actual surgical anesthesia may have to be carried out, in order to relieve even temporarily the patient's dangerous condition.

SUMMARY

The pathophysiology of bronchial asthma is briefly outlined and a method of treatment of severe or intractable asthma is described, which is simple, effective, and which may be carried out without hospitalization.

D. D. **Baugh**, M.D. (Columbus)—The treatment of intractable asthma often requires a great outlay of time-consuming attention and it taxes one's therapeutic ingenuity to the utmost.

When the patient is unresponsive to adrenalin, our most reliable remedy is, Dr. Feurst has just related to you, aminophylline. There is nothing more dramatic in medicine than to see a patient in extremis with asthma respond to intravenous aminophylline, even before the injection is completed.

In the occasional case where the patient does not respond favorably to adrenalin or aminophylline, one may try ether in oil installations, dilute adrenalin intravenously, steam inhalations, oxygen, helium and profound sedation.

I would like to endorse Dr. Feurst's mention of the careful use of opiates in status asthmaticus where all other measures have failed. We are taught that opiates are contraindicated and are dangerous; and while I do not employ them myself often, I am sure that I have seen it become a life-saving measure when the patient is in extremis. Of the narcotics demoral is most effective and least dangerous, and dilaudid is next most desirable. A rare fatality (which is usually due to over-dosage) does not preclude the use of a narcotic when other measures fail. Habit formation to narcotics is a much greater danger than a rare fatality that one hears about.

In the intrinsic type of asthma with status asthmaticus one will occasionally see a case where the immediate response to treatment is good, bad, or indifferent (often the last), but in which the patient remains quite asthmatic for one or more weeks. In this type the offending allergin often is due to the bacterial flora of the bronchial tree. In these cases I have seen dramatic response to the use of sulfa drugs and antibiotics such as penicillin.

Finally, in treating asthma, we must not overlook the advantages of hospitalization per se. With hospitalization there is the possibility of removing the patient from an unfavorable allergic environment, and the probability of removing the patient from unfavorable psychic factors at home. The psychic factor in the production and prolongation of acute asthma cannot be overemphasized.

Dr. P. S. **Herring** (Vicksburg)—There are two points that I would like to bring up regarding the treatment of asthma: first, caution in regard to the use of too much adrenalin in this condition. In spite of opinions to the contrary, I believe that adrenalin definitely causes harm, when used too frequently, by depleting the liver of its glycogen. In many such cases of status asthmaticus that we see in severe conditions in the hospital, I believe, are partly due to repeated and ineffective doses of adrenalin. If one or two doses of adrenalin do not break up an attack of asthma, it has been my experience that subsequent doses are going to be of no avail.

The other point is the mention of a new drug that will soon be marketed by Frederick Stearns and Company, under the name of isuprel. This drug was first called to my attention by Doctor Ralph Bowen of Houston, Texas, who recommends it very highly and in the cases that I have had occasion to use it in, subsequently, it has seemed to be very much worth while. One feature of it is that it does not increase blood pressure but on the other hand has a tendency to lower blood pressure and it seems to have a very wide range of safety. In addition, it works very well orally, subcutaneously, sublingually or by nebulization.

L. H. **Eubanks** (Pascagoula)—Much harm has been done by somebody's good intention in the treatment of asthma. I have seen bad results with several patients who were really suffering from congestive heart failure, and had used a nebulizer with adrenalin because some friend had suggested it. We should discourage druggists in dispensing these products to anyone who may ask for them.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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State Associate Editors
Stanley A. Hill, M.D., ... Corinth, Miss.
L. L. McDougal, Jr., M.D. .... Tupelo, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

AMERICAN MEDICAL ASSOCIATION SAYS PUBLIC DEMAND FOR SERVICE AT NIGHT MUST BE MET

"From many sections of the United States," says an editorial in the March 6 issue of *The Journal of The American Medical Association,* "complaints have come lately that persons who have called physicians late at night have been unable to secure attendance from either those whom they considered their family physicians or from specialists or, indeed, from any physician."

"The American Medical Association says that large county medical societies or urban groups should maintain a physicians' telephone exchange which would take the responsibility for locating physicians if response is not made to the ringing of the telephone in the home or in the office.

"The solution is simple and practical, requiring only a minimum of community organization. A number of county medical societies already maintain a physicians' telephone exchange where doctors' calls may be received and doctors located if their office or home telephones do not respond."

The above admonition from the greatest medical organization in the world is worth heeding. This organization is becoming more and more active in its efforts to get medical service out to all the people. The National Organization of Physicians has done a fine work in keeping state medicine from being foisted upon us to the detriment of the people and the doctors, but the root of the cause of the problem has not been generally reached yet. The editorial goes on to suggest that young doctors be listed at the hospital for night calls. Some counties have had no young doctors added for fifteen to forty years, some have no hospital or facilities for a doctors' telephone exchange. Some counties have only one or two doctors and in one Mississippi county the same man has practiced for more than fifty years. The average young doctor not only rebels at night calls, but holds about the same attitude about day calls. The young doctors in the main are taught in such a way that they are determined to stay in the cities. Big fees, selected patients, golf by afternoon and parties by night seems to be the order. A beginning salary of $400 or $500 per month plus other considerations does not interest the young doctor in the small town and rural community. The dean of a medical school in Memphis stated that Tennessee is 650 short on doctors. The three medical schools insist on taking only permanent residents of Tennessee. The dean states that this state can not hope to gain over fifty doctors per year—thirteen years to balance doctors with medical needs. By the same reasoning Mississippi is 1300 doctors short and it has only a two-year school. At the present rate of supply it will do well to balance its doctors with its medical needs in fifty years. As long as we have so many people in need of medical service there will be a danger of state medicine, which of course would be a great tragedy for the people and the profession. As far as Mississippi is concerned it needs a good hospital system, but it needs just as much or more a four-year medical school. If the young native doctor is taught in Mississippi, is given his internship one year at least in a small hospital, he will know how to practice in the small town and rural community when he gets out, will marry a fine girl in the small town and be prepared to render the greatest service now open to man. But while people die, state medicine gets nearer the doctors and the politicians sit idly by without the proper vision of medical service and its value to human society Our great national organizations have served well. Let us take their advice and follow their suggestions as far as they reach, but at the same time let us try to point them to the real grass roots of the medical service problem in the small town and rural community.

HOW TO HAVE THEM

"I am a general practitioner, and I know the need for more of them," the doctor said. "Too many of our medical schools are turning out only specialists, and we are getting too many of them."

In his address before the society's House of Delegates, Dr. Evans commended officials at the University of Arkansas medical school for their selection of applicants. He pointed out that a majority of the students admitted to the University's school were from small towns.

"I think it takes a small town doctor to know how to handle a small town patient," he said.

Dr. Evans also touched on the question of socialized medicine, asserting that if the leaders of the medical profession teach their profession properly, "then American medicine can continue to be a bulwark against socialized medicine."

The above from Dr. L. T. Evans of Batesville, Ark., president of the Arkansas State Medical Association, comes from a fine practitioner who has backed up every word he has spoken with deeds. He is an able man with the heart of a real doctor. We are proud to know that Arkansas is developing such a fine medical school. It will turn out practitioners who will do the job for their state and will be recognized anywhere else they go. If we have state medicine the big blame may truly be laid on our medical schools and the medical profession. We are not yet working at the grass roots of the problem. While Arkansas has a fine medical school doing a fine service Mississippi works on the halves, so to speak, very much to her discredit and to the lack of medical vision and professional courage.

You will note in this issue that the Medical College of Alabama is conducting a two-day post-graduate seminar in Birmingham on May 3 and 4. Distinguished men from all over the country will take part in it for two days and nights. Dr. Roy R. Kracke, the dean, is extending to every doctor in the state a most cordial invitation to attend. Be sure to attended if you can. It is wonderful to see our sister state of Alabama coming to the front so rapidly in medical education and in medical service to the doctors and the people.

Our state association is really out for a fine session this year. The program is fine and everything is planned for one of our best and most enjoyable meetings. The program committee has been on its tiptoes arranging one of the very best programs we have had. Don't fail your state meeting.

Note that the dinner for the Fifty-Year Club is to be held at the Robert E. Lee Hotel on Tuesday, May 11, at 5:30 p.m. We hope to have a good turnout of these noble boys who have measured greatness in terms of service for a half century or more.

If you have not made reservations for the state meeting, you should do so at once. Our best meetings usually are in Jackson, near the center of the state. Jackson is the fastest growing city in the deep South. The residents are cordial and the doctors are fine entertainers. We have an excellent program in store. Every doctor should attend his local, state, and the A. M. A. meetings if at all possible. They have to do with the business and the organization of medicine as well as the scientific progress. Medicine continues to progress at a very rapid rate and it is hard to keep up at best. It pays the doctor and especially his clientele for him to attend his medical meetings.

Dr. Paul Gamble of Greenville is the honored state president this year. His brother, Hugh, served well as president before him. Dr. R. B. Caldwell of Baldwyn is the president-elect. The program committee has worked hard to give us the best. The exhibitors, both commercial and scientific, have been welcomed, and all other arrangements are under way to make the meeting at Jackson pleasant and profitable.

Don't fail to attend the state meeting in Jackson, May 11, 12 and 13.

News and Comment

THE STATE MEETING

May 11, 12, 13, 1948
Convention Hall, Robert E. Lee Hotel
Jackson, Miss
Dr. Paul G. Gamble, Greenville, President

THE SECTION ON HYGIENE AND PUBLIC HEALTH, Dr. Andrew Hedmeg chairman, meeting Tuesday afternoon from 1:30 to 6:30 p.m., will hear addresses by Dr. James Hughes, University of Tennessee, Dean F. Smiley, Bureau of Health Education, A.M.A., Dr. James V. Lowry of the Mental Hygiene Division of the U. S. Public Health Service, and Dr. H. C. Ricks of the State Board of Health.

THE SECTION ON EYE, EAR, NOSE AND THROAT, Dr. E. W. Green chairman, meeting Tuesday afternoon, will have three out-of-state men, Dr. George Shambaugh, Jr., of Chicago, Dr. Shelly Gaines of New Orleans, and Dr. Wm. B. Clark of New Orleans, and papers by Dr. Van Dyke Hagaman of Jackson and Dr. Arthur Hays of Gulfport.

THE SECTION ON SURGERY, Dr. Harley Shands chairman, will meet Wednesday morning, to hear Dr. Wichell McK. Craig of Rochester, Minn., on operation for hypertension, Dr. Alton Ochsner and Dr. M. E. Debakey of New Orleans on bronchogenic carcinoma, Drs. Temple Ainsworth and Lloyd E. Deddens of Jackson, Dr. R. H. Fensternacher of Vicksburg, Dr. George F. Archer of Greenville, and Dr. Harley Shands of Jackson on one of the most completely worked up cancer programs presented in the state.

THE SECTION OF MEDICINE, beginning at two o'clock Wednesday afternoon with Dr. Charles W. Patterson of Rosedale presiding, will have two eminent men from out of the state, Dr. C. Thorpe Ray of New Orleans and Dr. Edward S. Miller of Atlanta, who will discuss heart failure and poliomyelitis, respectively. Dr. Patterson, Dr. G. Y. Gillespie, Jr., of Greenwood, Dr. John G. Archer of Greenville, Dr. H. H. McClanahan, Jr., of Columbus, Dr. Lucian M. Ferris of Vicksburg, and Dr. A. Gayden Ward of Jackson will all bring discussions on problems in medicine.

The annual public session, including Dr. Gamble's address, and the annual oration by Dr. Edward Sugarbaker of Jefferson City, Mo., will be held at eight o'clock Tuesday evening.

THE MISSISSIPPI STATE PEDIATRIC SOCIETY will meet Monday afternoon at three o'clock and present three guests for the afternoon and evening session: Dr. John H. Dent of New Orleans, Dr. William Parson of New Orleans, and Dr. Ralph V. Platou of New Orleans.

THE AMERICAN COLLEGE OF SURGEONS, Dr. George Wallace of Biloxi presiding, will also meet Monday evening, with Dr. J. Elliott Scarborough of Atlanta as the guest essayist. Dr. Edley H. Jones of Vicksburg, Dr. Leslie V. Rush of Meridian, and Dr. James C. Green of Tupelo will present papers.

Breakfasts, luncheons and dinners are scheduled as follows:

Monday, 6:30 p.m.—Gynecology and Obstetrics Banquet.

Tuesday, 7:30 a.m.—Past Presidents' Breakfast, Jackson Room.

Tuesday, 12:00 noon—Eye, Ear, Nose & Throat Dinner.

Tuesday, 12:15 p.m.—National Physicians Committee Dinner.

Tuesday, 5:30 p.m.—Fifty-Year Club Dinner.

Tuesday, 6:15 p.m.—Alumni Dinner.

Wednesday, 12:30 p.m.—Past Presidents' Dinner, Jackson Room.

Wednesday, 7:30 p.m.—Banquet, Victory Room, Heidelberg Hotel.

Dr. Curtis J. Lund, professor of obstetrics and gynecology at Louisiana State University, will make an address before the Mississippi Obstetrical and Gynecological Society at 6:30 p.m. on Monday evening, May 10, 1948. This is the evening before the Mississippi State Medical Association convention. The dinner will be given at the Silver Room of the Hotel Heidelberg in Jackson. The charge will be $2.50 per plate. Every doctor in Mississippi is invited to attend and urged to make his reservation now.

BLUE CROSS PRODUCE RADIO SHOWS

"Behind These Portals," a series of four fifteen-minute recorded radio shows telling the hospital story, have been produced by Blue Cross in the interest of the nation's community hospitals. These recorded programs take the listener behind the scenes of a community hospital to explain how a hospital operates, what its problems are, what it contributes to community health, how it trains nurses, and how it serves the medical profession. The topics are presented against a background of every-day human experiences that the public can understand.

SOUTHERN BRANCH—AMERICAN PUBLIC HEALTH ASSOCIATION

The second annual meeting of the Southern Branch of the American Public Health Association was held in New Orleans, Louisiana, April 12, 13 and 14. Sixteen southern states, Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia were represented and also the District of Columbia. A number of private physicians and members of the faculties of the two medical schools in New Orleans attended the meeting. Louisiana led in number of representatives with Mississippi next. Of the three and one-half thousand members in the 45 million total population of these states, there was a registration of 650. The theme of the conference was "In Health We Are United." The next meeting will be in Dallas, Texas.

NEW SANATORIUM OPENS

This month Dr. Leonard C. Wright, former Memphis neuropsychiatrist, announces the opening of his sanatorium for the treatment of nervous disorders, alcoholics and drug addictions. The Leonard Wright Sanatorium, a spacious, home-like, beautifully set structure, is located at Byhalia, Miss., twenty-four miles southeast of Memphis on Highway 78.

ANNOUNCEMENT

Dr. Albert Dabney Hurt announces the reopening of his offices for the practice of surgery in Corinth, 213-214 Williams Building.

Dr. H H. Puryear announces the removal of his offices from Pickens, Miss., to Raymond, Miss. He is located for the practice of medicine in offices over McNeill's Drug Store.

DR. WILLIAM A. JOHNS

(Text of tribute by Dr. W. H. Anderson on the public ceremony recognizing Dr. Johns on the occasion of his being presented his Fifty-Year pin and certificate, First Baptist Church, Corinth, Miss.)

Dr. Johns was born in Corinth May 5, 1869, the son of Reuben A. and Maggie Borrum Johns. He has lived within two blocks of the First Baptist Church all of his life. One of the first graduates of the Corinth High School, he was a member of the class of 1884. The building was then located where the primary school is now, and Dr. J. William Stokes was the superintendent. Dr. Johns attended the famous Bell Buckle School for Boys in Tennessee, spent two terms at Vanderbilt University where he began his training in medicine, then completed his study for his M.D. degree in 1894 at the Memphis Hospital School, which is now the University of Tennessee, where he assisted Dr. W. B. Rogers one year, the able and well-known professor of surgery of the University of Tennessee.

Although he had been licensed to practice medicine in Mississippi in 1893, Dr. Johns spent a year practicing at General Teran, Neuvo Leon, Mexico, then in 1895 came to Corinth, where he has practiced ever since. In general practice until 1912, he decided to give all of his time to ear, nose, and throat work, and proceeded to take extra preparation for this specialty at the New York Polyclinic, and Manhattan Eye, Ear, Nose, and Throat Hospital, the Dr. Knappe Clinic in New York, and the Chicago Eye, Ear, Nose, and Throat Hospital in Chicago.

For fifty unbroken years Dr. Johns has been a member of the Mississippi Medical Association.

Dr. Johns' more strenuous hobby in early life, hunting, has given place to fishing now.

It would hardly be possible to eulogize the achievements of one of Corinth's native sons without bringing in the proper identity with the town where he has so long served. The gateway on the north to the most rapidly progressing state in the union, Corinth is an old city compared with some. It suffered deeply from the War Between the States, but rose gallantly to become one of our best balanced cities in business, education, religion, culture, and patriotism. Dr. Johns epitomized the Corinthian buoyancy of spirit and cordial warmth of heart. Not only that, but he has been a fine abridgement of the medical profession of our state. Service is his watchword. And like the great biblical lawgiver, who lived one hundred and twenty years, his eyes not dimmed or his natural forces abated, Dr. Johns still looks ahead with a keen vision.

While aiding the eyesight of his patient, by example and by word he has inspired purpose of heart and courage to accomplish. He has taught the ear to hear the things that are pure and lovely and of good report. While he has remedied vocal maladies he has put music in the soul. The nose he has made more sensitive that it may sort the good things from the bad. He has kept abreast of the march of scientific medicine, and at the same time has done his part well to bring with the science the spirit of his profession, its heart, its soul. He has ever kept in mind the challenge to the medical profession in the building of the most useful type of citizenship, one strong in health, mission, and spirit.

The fine testimonials we have heard from Dr. Hamrick, Mr. Jones, Senator Shook, and Mayor Horn prove that Dr. Johns is a well-rounded man, the type that helps to make a town, a state, and a nation strong and secure. These men have brought to him tonight flowers of variety, fragrance, and beauty, while yet he lives. By so doing the brotherhood in the profession has been strengthened, the love of the redeemed has been made more tender, and city spirit has been emphasized. We trust that this service tonight will broaden the understanding between the medical and the laity, and make both more determined to make our nation stronger by preserving the most precious commodity we possess—health assets, physical, mental, and spiritual.

Dr. Johns, we take pleasure in delivering to you this certificate of service of fifty years, and this button to signify that you have been enlisted as a soldier of health for a half century.

THE ANNUAL POSTGRADUATE SEMINAR

The Medical College of Alabama

JEFFERSON-HILLMAN AUDITORIUM — MAY 3-4, 1948

Birmingham, Alabama

ALL MISSISSIPPI DOCTORS CORDIALLY INVITED

MONDAY, MAY 3

9:00- 9:45 A. M. Lecture—
Diagnosis and Treatment of Sprue and Pellagra
Dr. Tom D. Spies
Department of Nutrition and Metabolism
Northwestern University

9:45-10:30 A. M. Clinic—
Pulmonary Neoplasms
Dr. Osler A. Abbott
Department of Clinical Surgery
Emory University Medical School

10:30-11:15 A. M. Clinic—
Iron Deficiency Anemias
Dr. William J. Darby
Department of Medicine
Vanderbilt University Medical School

11:15-12:00 A. M. Lecture—
Minimal Standards for Evaluation of the Sterile Couple
Dr. B. Bernard Weinstein
Department of Obstetrics and Gynecology
Tulane University School of Medicine

12:00- 1:00 P. M. Clinicopathologic Conference—
Dr. Howard T. Karsner
Professor of Pathology
Western Reserve University School of Medicine
Dr. James S. McLester
Professor of Medicine
The Medical College of Alabama

2:00- 2:45 P. M. Lecture—
Surgery of Congenital Heart Lesions
Dr. Osler A. Abbott

2:45- 3:30 P. M. Clinic—
Nutritional Deficiencies
Dr. Tom D. Spies

3:30- 4:15 P. M. Clinic—
Gynecological Disorders
Dr. B. Bernard Weinstein

4:15- 5:00 P. M. Lecture—
Obesity
Dr. William J. Darby

5:00- 6:30 P. M. Social Hour for All Physicians—Tutwiler Hotel
Courtesy of Staff of Jefferson-Hillman

2:45- 3:30 P. M. Clinic—
Management of Urinary Stones
Dr. Hugh J. Jewett

8:00 P. M. Lecture—
Functional Tumors of the Ovary and Adrenal Glands
Dr. Howard T. Karsner

The evening session on Monday will be a joint event of the Postgraduate Seminar and the Jefferson County Medical Society. The latter will have as its guest speaker Dr. Robert L. Sanders, Associate Professor of Surgery, University of Tennessee, Memphis. His subject will be "The New Approach to the Peptic Ulcer Problem with Special Reference to Vagotomy."

TUESDAY, MAY 4

9:00- 9:45 A. M. Lecture—
Carcinoma of the Bladder
Dr. Hugh J. Jewett
Department of Urology
Johns Hopkins University School of Medicine

9:45-10:30 A. M. Clinic—
Removal of Foreign Bodies from the Lungs and Stomach
Dr. Murdock Equen
Atlanta, Georgia

10:30-11:15 A. M. Lecture—
Early Pulmonary Tuberculosis and Its Development
Dr. Robert G. Bloch
Professor of Medicine
The University of Chicago School of Medicine

11:15-12:00 A. M. Lecture—
What's New in the Treatment of Common Rheumatic Diseases
Dr. C. H. Slocumb
Mayo Clinic

12:00-12:45 P. M. Clinic—
Diagnosis and Treatment of Melanoma
Dr. George T. Pack
Memorial Hospital
New York, New York

2:00- 2:45 P. M. Clinic—
Sarcoidosis
Dr. Robert G. Bloch

3:30- 4:15 P. M. Lecture—
Carcinoma of the Esophagus
Dr. Murdock Equen

4:15- 5:00 P. M. Clinic—
Various Types of Rheumatic Diseases
Dr. C. H. Slocumb

8:00 P. M. Lecture—
The Extension of Radical Surgery in the Treatment of Cancer
Dr. George T. Pack

NO REGISTRATION FEE

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology—Vol. '2, No. 5, November-December, 1945.

SKIN ERUPTIONS DUE TO THE LOCAL APPLICATION OF SULPHONAMIDES. G. A. Grant Peterkin, Brit. J. Dermat. 57:1 (Jan.-Feb.) 1945.

The author reports 65 cases of light eruption due to the external application of sulfonamide drugs. Thirty-two of the patients had been treated for impetigo; eight for impetiginized seborrheic dermatitis; three for septic infection of the limbs; two for secondary infected tinea of the feet; five for "running ears" (otitis externa), and fifteen for wounds and burns of the limbs. In all but four cases the first sulfonamide drug to be applied was sulfanilamide powder. It is suggested that the eruption is invariably, or almost invariably, preceded by application of the powder and that the patient becomes sensitized to the drug by its inhalation. It is urged that powdered sulfonamide compounds should not be applied to the skin for minor conditions.

Over 200 patients, including 183 with impetigo or impetiginized seborrheic dermatitis, were treated in North Africa with 5 per cent sulfathiazole in paste of zinc oxide or Lanette wax cream and the skin freely exposed to light. Only one patient (with respirator dermatitis) had the eruption described, but this was mild and soon subsidized. It is considered that 5 per cent sulfathiazole in a suitable base is probably as safe as such drugs as ammoniated mercury for dermatologic therapy and gives results. A comparison is made between this eruption and other light dermatoses, such as Hutchinson's summer prurigo and pellagra.

* * *

SULPHONAMIDE ALLERGY: THE PERSISTENCE OF DESENSITIZATION. R. G. Clark, Brit. M. J.. 2:816 (Dec. 23) 1944.

The author describes two types of allergic sensitivity which can arise during sulfonamide therapy—according to whether the drug is taken internally or is applied to the skin. The internal type may take many different clinical forms of which fever, morbilliform erythema and leukocytosis are the commonest features. In the cutaneous type the reaction is an eczematous dermatitis. In either case violent reactions are apt to follow administration of the drug by mouth.

The author feels that he has successfully desensitized his patients by giving gradually increasing amounts of the drug by mouth. For patients with the internal type it is usually possible to start with 0.1 gm. at each dose, doubling up daily to reach 1 gm. in four or five days. For more sensitive patients desensitization may take longer.

In persons with the eczemas a high degree of sensitivity is the rule, requiring a starting dose of 0.005 gm. and about six weeks to desensitize. In one case reinvestigation after one year showed that the allergy had partially returned but to only a fraction of its original level.

PEDIATRICS

PROPOSALS FOR CANCER CONTROL IN CHILDHOOD, Harold W. Dargeon, M.D., New York, *The Journal,* A.M.A., Vol. 136, No. 7, February, 1948.

"The need for collaboration in the study of tumors in children has been recognized by all those engaged in this field. The American Academy of Pediatrics has endorsed such a coördinated study as part of its national child Health program, by the establishment of the Children's Tumor Registry. The combined experience of various clinics is required to evaluate results, incidence and diagnostic criteria, because the type of tumors observed in each hospital may vary considerably.

The satisfactory control of any disease requires the application of preventive measures, if available, or an aggressive therapeutic attack before the disease has progressed beyond the period of possible cure. Some prophylactic measures for childhood cancer are outlined in succeeding paragraphs.

The success of the methods now employed in treatment is determined not alone by the capabilities of the surgeon and radiotherapist but also by the rapidity with which they are permitted to institute treatment for a potentially curable neoplasm. Therefore the outcome of the curable case depends largely on how early it is recognized and how promptly treatment is started.

No member of the entire group of physicians concerned with the problem of cancer in childhood—the surgeon, radiologist, pathologist, pediatrician or health officer—is more important than the family physician, who usually sees the patient first and whose opinion and recommendations are the basis for the family's decisions.

Therapy, with certain modifications, has been relatively standardized; consequently, many localities in the country now offer proper treatment. The current necessity is for greater attention to earlier diagnosis.

A satisfactory cancer program for children should include 1) periodic health examinations; 2) excision or biopsy of swellings as indicated; 3) excision of potentially cancerous growths; 4) systemic clinical investigations, and 5) a revision of the attitude toward benign tumors.

1. Health Examinations — The periodic health examination should take place monthly from birth to one year of age, quarterly from one to six years and semiannually thereafter. In this examination a roentgenogram of the thorax and a complete blood count in addition to other pediatric routines should be included.

2. Excision or Biopsy of Swellings—Excision preferably, or biopsy, should be done of any suggestive swelling which is a) of traumatic origin but of unusual duration or otherwise different from the frequent hematomas of childhood or b) of nontraumatic origin, except enlargements of organs, such as the breasts and testes, associated with the growth of the girl or boy, and gynecomastia.

3. Excision of Growths—Excision of potentially cancerous growths, such as melanoma, teratoma, dermoid and neuroma, should be accomplished as soon as possible.

4. Investigation—A disorder that appears to satisfy all but a few of the criteria of a common disease may be cancer. Investigation and even repeated investigations, therefore, should be routine in the presence of a) an atypical symptom complex or b) an unusual child patient, especially the precocious or retarded child, if the departure from his norm has been increasingly apparent or if the child has periodic vague illnesses with phases of normal health between attacks.

Observation of the child with unusual growth or retardation of growth of the body as a whole or some of its members should suggest to the physician the possible presence of a neoplasm. The child who is a behavior problem may likewise have a neoplasm. The necessity for eliminating the possibility of organic nervous disease in behavior problems has been repeatedly stressed by psychiatrists and psychologists engaged in this field as well as by neurologists.

5. Revision of Attitude Toward Benign Tumors—A revision in the attitude toward benign tumors is imperative. Any neoplasm, regardless of its histolytic structure, may cause death if its size, rapidity of growth, anatomic location or interference with function seriously disturbs vital activities. There are many examples of grave benign tumors, the most striking of which are the intra-cranial tumors. These are for the most part histologically benign, but they involve such important structures that they result in a high mortality.

The term benign tumor is therefore in many cases prognostically misleading to the patient and at times to the physician, unless all the implications of a tumor so designated are thoroughly understood."

COMMENT. It seems to us that the article "Proposals for Cancer Control in Childhood" is quite appropriate at this time since there is so much attention being given to this subject in all the fields of medicine. It was thought best just to give this article as it was printed in the *Journal of the American Medical Association* of February 14. This article is the ninth of a series to be published by the American Medical Association in cooperation with the American Cancer Society. There is much food for thought contained in the article, and we hope it will be of value to the profession of our state.

VETERANS ADMINISTRATIVE HOSPITAL

Clinical Pathological Conference

March 11, 1948

This 58-year-old colored male admitted 2/7/-48, with chief complaint of pain in the left side of two days' duration. Patient stated on admission that five days prior to admission he was awakened in the morning with the feeling of nausea and soon began to vomit. For that whole day and the second day he continued to vomit everything taken by mouth. There was no pain associated and no hematemesis. On the third day before admission he developed a pain in the left flank radiating somewhat to the left upper abdomen. This pain was at first intermittent but increased in severity and became constant up until the time of admission. He continued to vomit during this time and had no bowel movement for two days prior to admission. There was a past history of recurrent pain in the left lumbar region usually associated with vomiting which had been present for twenty-two years.

Physical examination on admission showed a very well developed, well nourished colored male who was restless and apparently in moderate pain. Chest examination showed an area of increased dullness over the left upper chest anteriorly which ran the length of the sternum and about one inch lateral to it. The respiratory rate was 30 and the respirations were of a grunting nature. The lung fields were clear to auscultation. Blood pressure was 200/120 with pulse of 80. The heart was not enlarged to percussion but there was a loud systolic murmur over the whole precordium, loudest at the second left interspace. The murmur was not transmitted to the neck. There was marked atrophy of the right testis. Temperature 100° and remained elevated to 100° during most of hospital course.

The diagnostic impression on admission was urinary calculus and the patient was seen in emergency consultation by the G.U. consultant. KUB film showed no evidence of urinary calculus but there were 10 to 15 RBC in the urinary sediment. The urine also showed 2+ albumen and 1+ sugar. The latter finding is most probably explained on the basis of the intravenous infusion which was begun on admission to combat the patient's dehydration.

The flank pain continued during the first two hospital days and required morphine for relief. On the third day the patient was given an enema because of the lack of bowel movement, and the flank pain was completely relieved. A chest x-ray taken on that day showed a large tumor mass in the left mediastinum consistent with neoplasm or aortic aneurysm.

On the fourth and fifth hospital days the patient was comfortable but on the sixth day he was given an enema to relieve slight abdominal distention and within an hour developed severe crushing substernal chest pain which radiated to the left shoulder and left upper arm. The blood pressure fell to 120/80, respiration rose to 40 and patient became quite dyspneic. He appeared in shock and intravenous morphine was required for relief of the pain. He was placed in an oxygen tent and on the seriously ill list. EKG taken the day before this episode and one taken the following day showed no essential change. Fluoroscopy of the chest showed no pulsation in the mediastinal mass. A portable chest x-ray now revealed a probable effusion in the left pleural cavity. The hemoglobin fell from 17 grams on admission to 9 grams the day following the episode of chest pain.

On the seventh day the chest pain was improved but the patient was unable to void. He was catheterized and a small amount of urine obtained which was very dark in color and reported to contain bile. A chest aspiration was done on this date and 150 cc. of grossly bloody fluid removed from the left pleural cavity.

On the eighth day the dyspnea and dullness over the left pleural cavity increased and a chest x-ray showed peri-hilar infiltration in the right lung field in addition to the left pleural effusion which was still present. His hemoglobin had now fallen in 6 grams and he was given a slow transfusion of 250 cc. of whole blood.

On the ninth hospital day he was still markedly dyspneic but was able to void and the hemoglobin was somewhat improved. A repeat EKG this day showed no essential change

On the tenth hospital day the dyspnea was definitely improved and chest x-ray showed a diminution in the amount of the effusion in the left pleural cavity.

The eleventh hospital day the dyspnea was improved to the point where the oxygen tent was discontinued and patient had no pain.

The thirteenth day the NPN was reported as 150.6 and creatinine 8.1. However, he continued to feel well through the fourteenth and fifteenth hospital days, while on the sixteenth hospital day at 2:20 p.m., he developed sudden severe tearing pain in the lower left chest, his pulse rose, and he went into shock in a matter of minutes. An aspiration was done on the left chest and 370 cc. of dark brown fluid removed with no improvement in respiration. Adrenalin was given with no appreciable improvement and the patient expired fifteen minutes after the beginning of this episode February 23, 1948.

State Board of Health

Felix J. Underwood, M. D.

TOXEMIA OF PREGNANCY IN MISSISSIPPI

by James H. Ferguson, M.D.
Obstetric Consultant
Maternal and Child Health Division

Toxemias of pregnancy are more prevalent in Mississippi and other southeastern states than for the nation as a whole. In reports of maternal death on a nation-wide basis, hemorrhage is generally conceded to be the cause of more deaths than toxemia. In the vital statistics report from Mississippi for 1946, it is observed that toxemia figured in more fatalities than hemorrhage. Toxemia also takes its toll in stillbirths, abortions and neonatal deaths of small infants. Undoubtedly many additional maternal deaths in Mississippi were due to toxemia either directly or as a contributing cause, but the toxemia went unrecognized.

When we consider some conditions which we believe are associated with toxemias of pregnancy and in what unfavorable proportions they occur in Mississippi, there is no longer quite as much mystery as to why the rates are as high as they are. The susceptibility of the negro to cardiovascular disease may be added to these. At the root of many of the predisposing factors in toxemia are social and economic maladies which are beyond medical practice. However, improved medical care for the pregnant woman can do much.

Toxemia of pregnancy is a very general term, used to include chronic hypertensive disease in pregnancy, pre-eclampsia, eclampsia, and nephritis. This unfortunate terminology is saved by the fact that there is a good deal of similarity in the intelligent planning of prenatal care in each condition.

EXCESSIVE WEIGHT GAIN

It has been observed that doctors are frequently little concerned about excessive weight gains in pregnancy. Gains of thirty, forty, or even fifty pounds are common, inviting eclampsia or convulsions of pregnancy. The trinity of edema, albuminuria and elevated blood pressure relentlessly follow such weight gains.

The aim of good prenatal care is to keep the weight gain down to 17 pounds, or 20 pounds at the most. Another thing to watch is too rapid a weight gain, which can be as ominous as too great a total weight gain. A gain of one and one-half pounds or more a week is a red flag.

The maintenance of an orderly weight gain can be obtained only by a constant stressing to the patient of its importance and taking an active part in planning her dietary. When the ideal weight gain is attained, pre-eclampsia, or at least eclampsia, is rare.

It will take effort and time on the part of the physician to correct the erroneous idea held by many of the population that the expectant mother should eat for two. It goes without saying that patients must be seen early in their gestation and frequently thereafter. At the county health departments we plan for a visit a month during the first six months. two times a month in the seventh and eighth months and then once a week.

A physician practicing since 1910 in Clarke County investigated his records for me and found that his first 300 maternity cases included 16 cases of eclampsia. His most recent 300 cases contained only one. I asked him to what he attributed the improvement. "Prenatal care," he said. "In 1910 they didn't have any and now they do." He was right. There is an inverse ratio between the number of prenatal visits and maternity deaths is any locality.

Excessive carbohydrates and fats must be avoided and salt must be kept to a minimum. Fried foods should be avoided as much as possible. Try to replace some of the cornbread, biscuit, potatoes, beans, grits and rice, which all too often make up a large part of the menu, with a variety of foods that will insure a wider vitamin intake.

NUTRITION

The diet of lower economic groups is pathetically inadequate, but even that of the more favored classes leaves much to be desired. A woman with an adequate, well-rounded diet is in an infinitely better position to cope with toxemia, and in fact with all of the complications of pregnancy, than the patient with hit or miss, unplanned meals. In Mississippi, recent studies by Alice G. Keaton, Nutrition Consultant to the Division of Maternal and Child Health, have shown that diets among the population tend to follow an absurdly wide seasonable swing. With each swing an excess of one dietary staple excludes some component of a well-balanced diet.

It is a good idea for every physician to carry in his mind a simple check list on basic nutrition practices and run over them occasionally with his patients. For example: "Are you eating one good serving of lean meat a day? One green vegetable? Two other vegetables? A fruit? A quart of milk? An egg? Two slices of bread?" The Mississippi State Board of Health has prepared a simple and attractive pamphlet, *What About Your Food*, which will go a long way in helping patients stay on the right nutrition road. A postcard addressed to the Division of Maternal and Child Health will bring the physician a supply.

A forward-looking doctor must acquaint himself with the new advances in nutrition just as surely as he must learn the actions of the new drugs as they appear. The doctor's repertory of diets has extended far beyond the narrow confines of knowledge of a diabetic regimen. A supplement of synthetic vitamins, although sometimes indicated, is not the direct approach to this problem.

PROTEINS

Proteins, particularly animal proteins, are relatively expensive and often scarce in many households today. Nevertheless, they are indispensable in the patient's diet and the keystone of the physician's dietary support against toxemia. Once the signs of toxemia appear, efforts must be redoubled. The goal in the diet for the normal pregnant woman is one generous serving of lean meat a day; more if toxemia threatens. When the ability to provide beef, lamb, or fish at home is a problem, some meat extenders and meat substitutes are.

Spaghetti and meat balls
Stuffed green peppers
Creamed ground beef on toast, or
Mashed potato meat pie
Beef or kidney stew
Hash
Meat or liver loaf with soybeans
Scalloped ham and eggs
Cheese fondue
Baked beans
Creamed fish or cheese dishes
Scalloped soybeans
Scalloped corn
Omelettes
Cheese or peanut butter sandwiches
Corn and cheese casserole.

SALT

Tastes of many people in Mississippi are characterized by a penchant for articles with a high salt content. The salt meats, ham and sausage, abound with it. The gravy poured over so many foods is surfeited with it. It is desired that an excess of sodium ion in pregnancy be avoided as it holds water in the body. A disproportionate weight gain follows and with it the inevitable danger signal of edema. Once toxemia is established, salt should be excluded in cooking and at the table. Baking soda in baking and other preparations is omitted. When a low salt intake is indicated, crackers, cheese, prepared salad dressings, canned vegetables, soups and beer, must be omitted from the diet.

ANEMIA

Spot surveys of pregnant women in Mississippi have convinced me that there is an inordinate amount of anemia prevalent. With anemia the resistance is low to all three of the major causes of maternal deaths; namely, infection, hemorrhage and toxemia. Anemia abets edema. This is almost invariably an iron deficiency anemia and ferrous sulfate is the indicated remedy, not liver injections. Anemia is prone to make its initial appearance late in pregnancy. Therefore, a satisfactory hemoglobin level early in pregnancy should not make one feel secure for the remainder of gestation. The Tallquist hemoglobin test and a glance at the everted eyelid have fooled many. The Sahli, or some other dependable test, is preferred. Your health department has a pamphlet which will help you to get started on an inexpensive, dependable method known as the "falling drop" hemoglobin test. This will enable you to screen your patient at eleven grams of hemoglobin, for example, in the time of one minute per patient.

In severe anemias, transfusion should be considered.

The widespread incidence of hookworm infection contributes to low blood levels. Suspect it and have a specimen tested. Treat your pregnant patient for hookworm when indicated.

Continued improvement in maternal mortality rates depends largely on the physician. It is to be hoped that he will make the most of this opportunity, putting to work all the knowledge and resources at his disposal

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	Feb. 1948	Feb. 1947	Feb.-Five Year Avg.
Poliomyelitis	0	6	3.6
Bacillary Dysentery	3	10	336.2
Diphtheria	12	26	24.6
Influenza	264	461	7181.6
Measles	179	66	1531.0
Meningococcus Meningitis	3	2	16.4
Other Forms Meningitis	6	3	8.8
Pellagra	2	3	87.2
Pneumonia	139	173	1657.0
Pulmonary Tuberculosis	164	134	131.8
Scarlet Fever	19	45	67.4
Smallpox	0	1	.8
Tularemia	6	8	4.8
Typhoid Fever	1	3	5.4
Typhus Fever	3	4	7.2
Undulant Fever	1	7	3.4
Whooping Cough	8	70	471.2

ACS FILM

shown at the 1947 Sectional Meetings and Clinical Congress of the American College of Surgeons and the Centennial Meeting of the American Medical Association. This film is now available for loan or purchase and is the first in the series of teaching films being produced under the expanded motion picture program.

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THE STATE MEETING

Doctors' wives will have an extraordinary welcome this year at the state meeting. It is planned to be one of the best attended meetings in years. Our president, Mrs. McIlwain, has worked assiduously, strongly aided by the president-elect, Mrs. Avent, in building up the membership. New auxiliaries have been organized, and a general boost in activity has marked the year's progress.

The annual program includes the general session at the Robert E. Lee Hotel, Wednesday, May 12, followed by the luncheon in the Victory Room of the Heidelberg Hotel. The usual welcome and cordial hospitality of Jackson hostesses is promised, with a number of entertainment features provided.

CENTRAL MEDICAL AUXILIARY

Mrs. R. C. O'Ferrall was elected president of the Central Medical Auxiliary succeeding Mrs. T. E. Wilson at the monthly meeting at the Officer's Club at the Veterans Hospital in March.

Other officers elected are: Mrs. James Walton Lipscomb, vice-president; Mrs. Frank X. Berry, secretary; Mrs. Boyd Edwards, treasurer; Mrs. P. R. Graves, parliamentarian; and Mrs. Byron Alexander, historian.

Mrs. C R. Miller was hostess for the afternoon and after a short business meeting conducted by Mrs. Wilson the invocation was given by Mrs. Lipscomb

Mrs. George E. Spencer, accompanied by Mrs. Gordon Hartnett, sang two delightful songs.

Refreshments were served from a table beautifully decorated with spring flowers. Mrs. L. B. Andrew and Mrs J. E. McDill assisted Mrs. Miller as hostesses.

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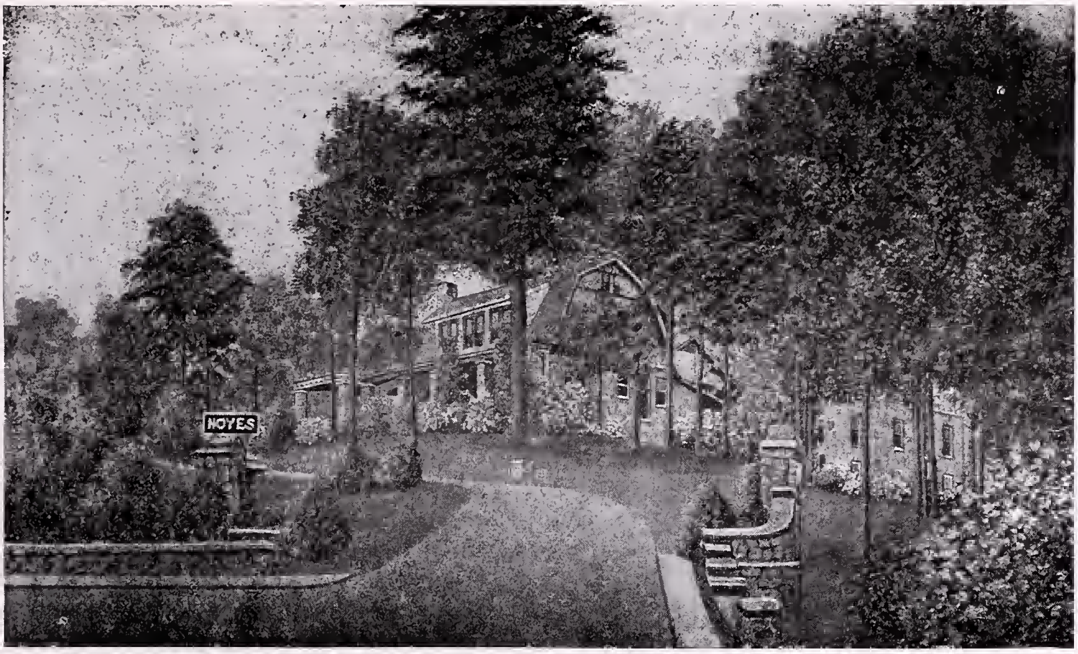

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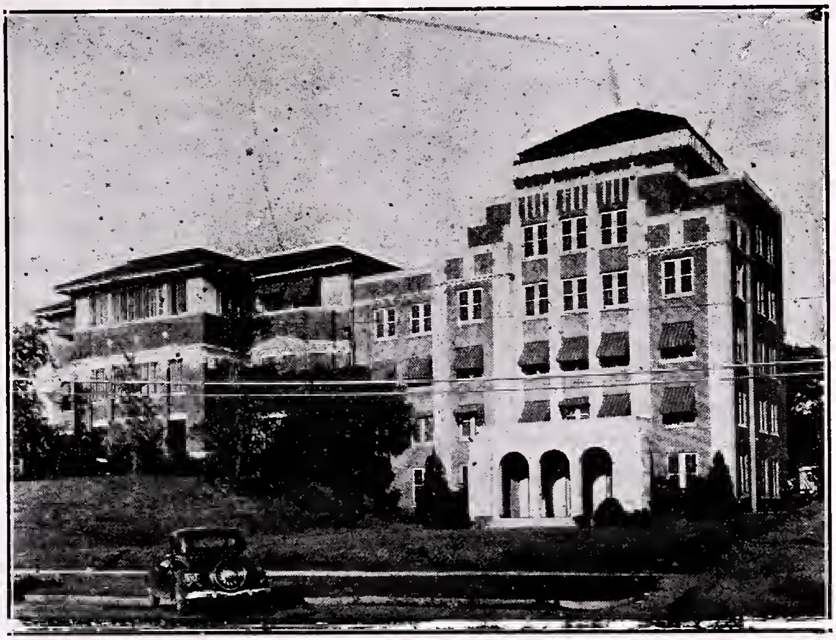

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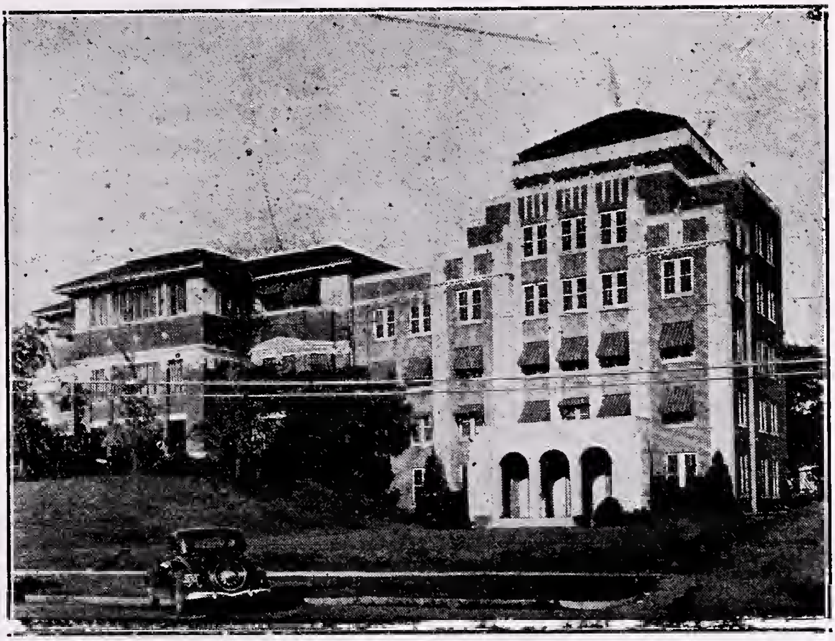

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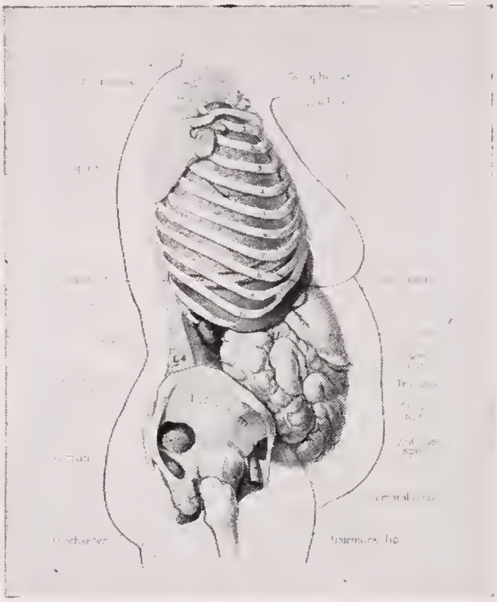

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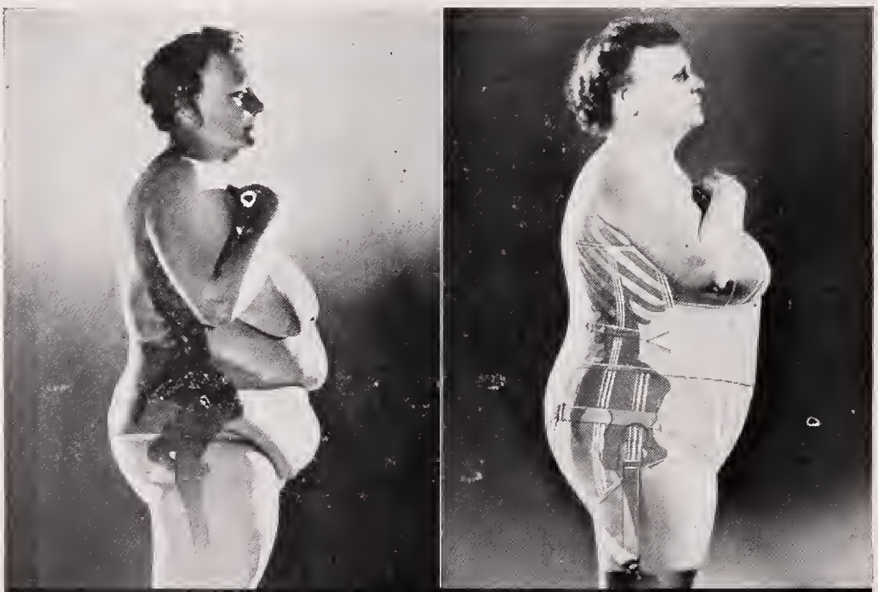

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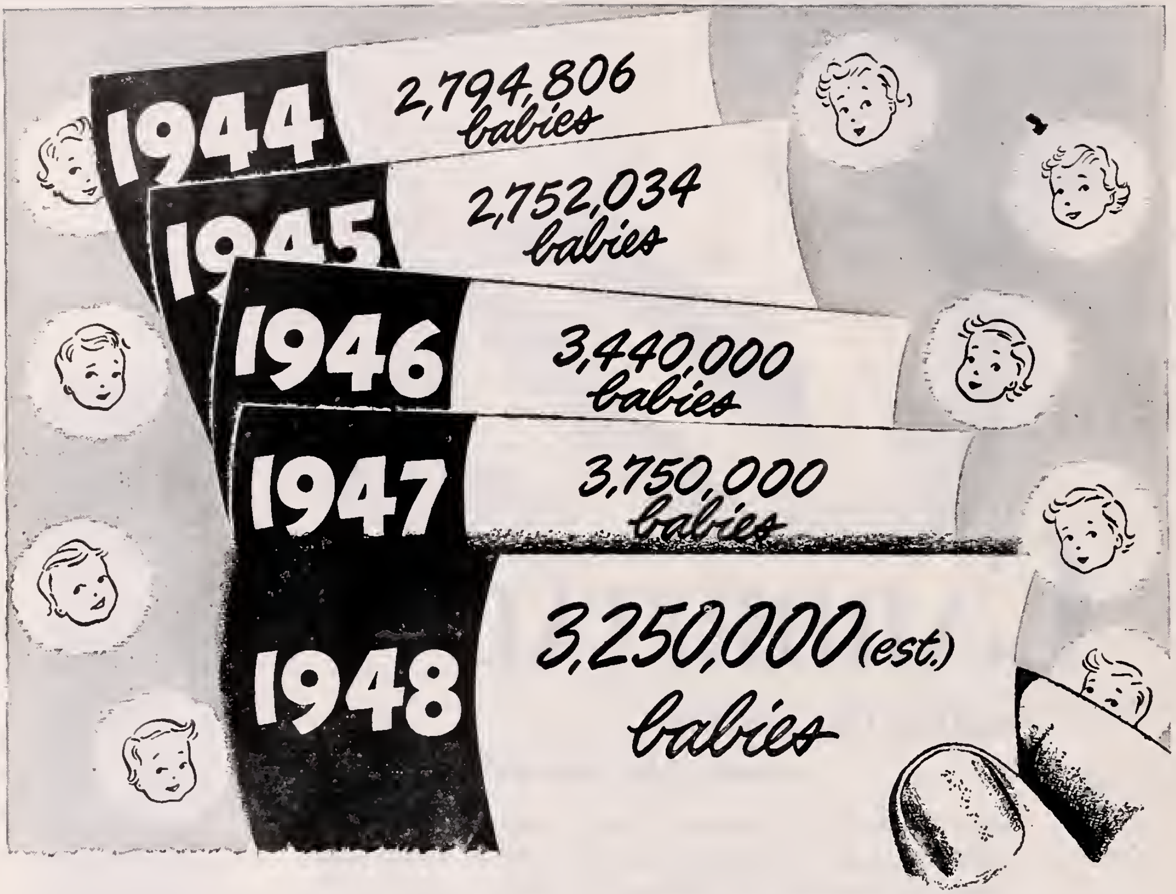

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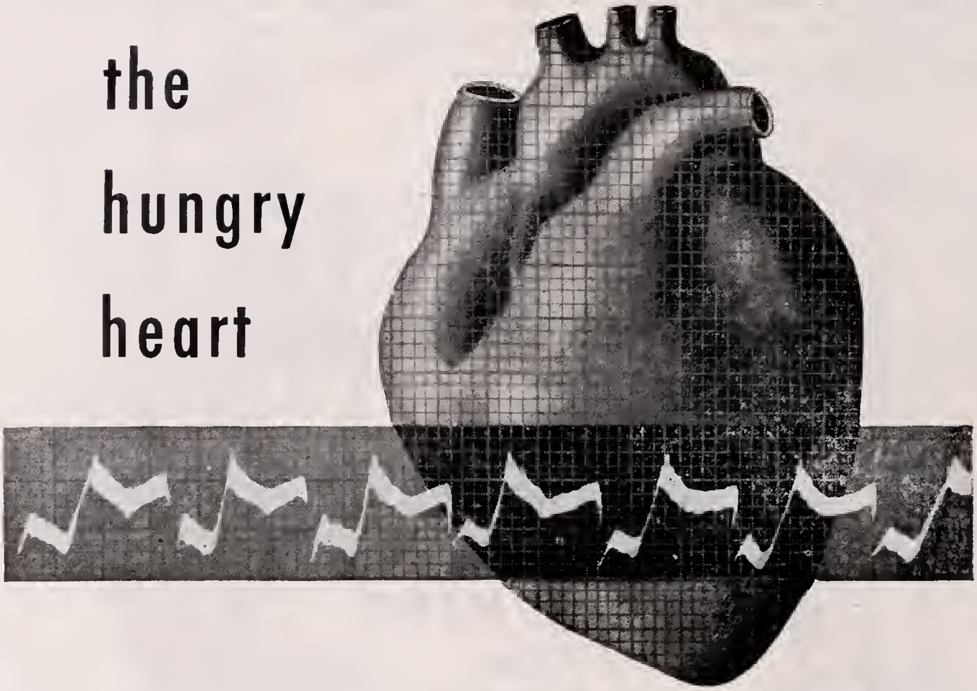

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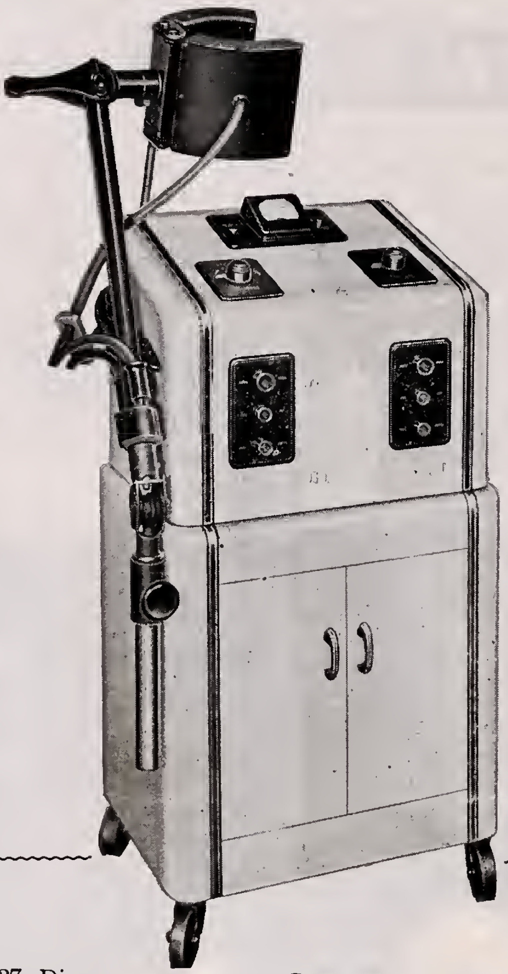

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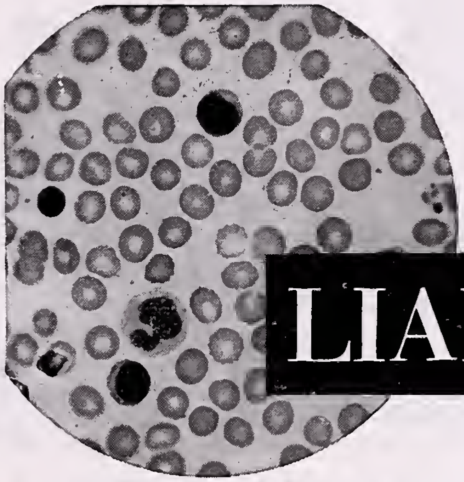

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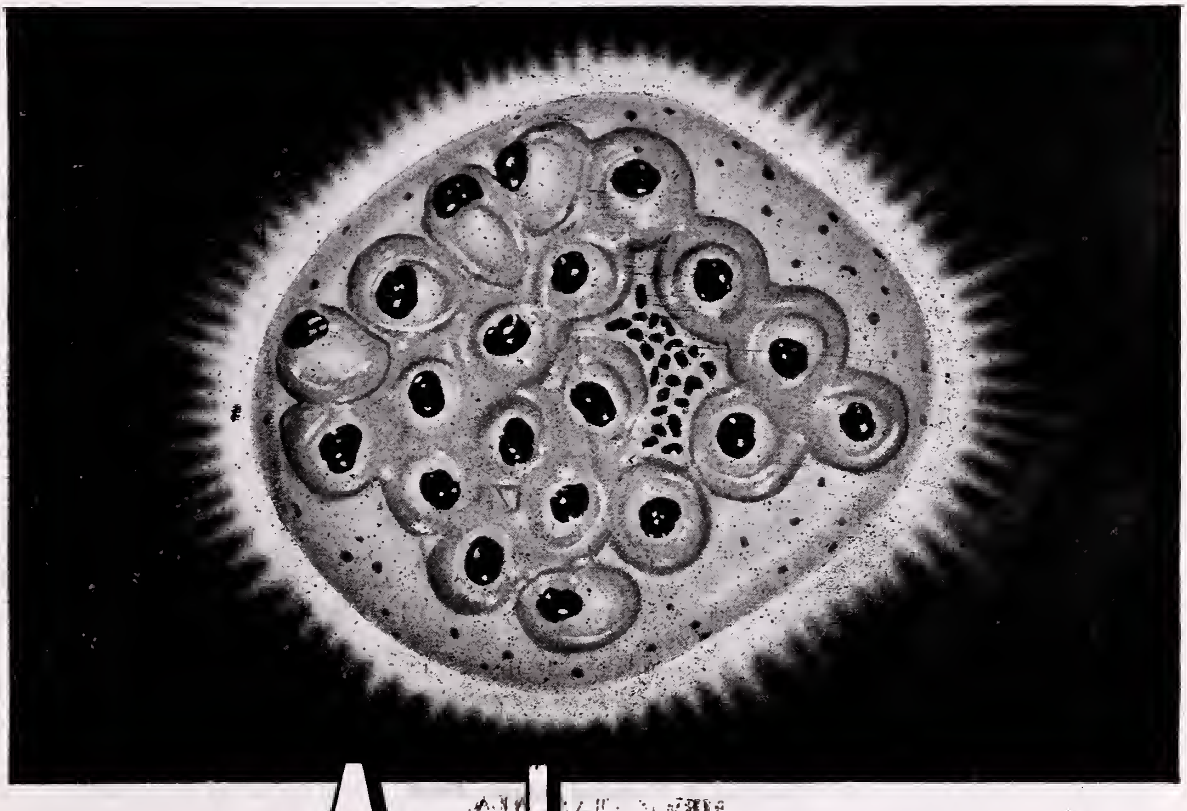

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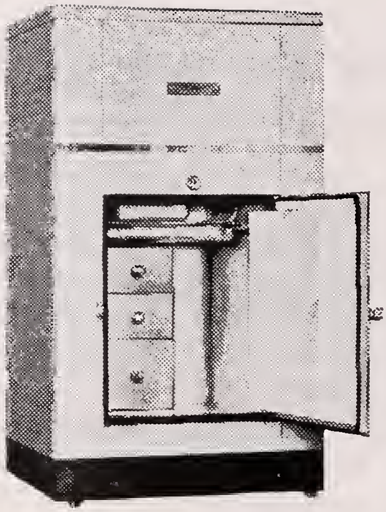

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Lumbosacral Fusion vs. Laminectomy for Protrusion of IV Disc for Selected Cases of Low Back Pain with Sciatic Radiation*

Guy A. Caldwell, M. D. and William B. Sheppard, M. D.†

MANY ORTHOPEDIC surgeons advocate fusion of the lumbosacral spinal segment in the majority of cases operated upon for protrusion of the nucleus pulposus. This is based upon the theory that instability of the joints of the lower part of the spine may be associated with congenital anomalies that are found in approximately 15 per cent of all spines. It is believed that instability produces degenerative changes in the intervertebral disc with ultimate rupture and protrusion of the nucleus pulposus. When the rupture and protrusion occur opposite the intervertebral foramen, the sciatic nerve root may be compressed with resultant pain in the distribution of the sciatic nerve. Operation for removal of the protruded nucleus often includes currettment of the remaining nucleus pulposus. Narrowing of the intervertebral space and additional instability of the spine may ensue and be productive of early hypertrophic changes or recurrence of protrusion with disabling pain. Therefore, the bone graft for fixation of the involved spinal segment would seem to be indicated to prevent painful motion and possible recurrence of protrusion. This has been a working plan for treatment in some centers for several years, but we have not done spine fusions on this group of cases and wished to determine the results obtained.

We, therefore, recalled and reexamined 75 patients in whom protrusion of the nucleus pulposus was proved at operation three to seven years ago. In addition to a carefully taken history and physical examination, roentgenograms of the lumbosacral region were obtained and compared with reports of the preoperative examination. These patients were reexamined and the results evaluated by one of our group who had had no previous contact with them. We were interested in determining as far as possible the end result in terms of function, the changes that had occurred at the site of operation after three to seven years, as shown in the roentgenograms, and whether or not there was any relation between the presence of congenital anomalies and the functional end results or between the postoperative changes and the functional end results. The functional results were calculated as excellent, satisfactory, or unsatisfactory. The results were considered as excellent if the patient was in complete agreement with the examiner that there was absolutely no disability resulting from the original pain in his leg or back or from the operation performed. The results were classed as satisfactory if the patient in spite of minor difficulty with his back or leg returned to work in full time without disability. Unsatisfactory results were obtained by those patients who could not work full time because of persistent pain in back or leg, or by those who were completely relieved of the initial pain in the back or leg but later developed symptoms necessitating a second operation.

Good functional results, that is the total of excellent and satisfactory results, were obtained in sixty-two cases, or 82.7 per cent. These functional results from laminectomy alone compare favorably with results reported by Ghormley, Smith and Barr, in which the combined operation was performed. If as many good results can be obtained by laminectomy alone, one may rightly speculate as to the necessity of the combined operation.

Congenital anomalies at the lumbosacral junction were found in 36 per cent of this series of cases. However, they occur more frequently in patients who had excellent or satisfactory results than among those with satisfactory results. Postoperative hypertrophic changes with or without associated narrowing of the intervertebral disc appeared in 69 per cent of our cases. However, they were more frequent and of greater degree among those with excellent and satisfactory results than among those with unsatisfactory results.

Eight per cent of our cases developed recurrences of disc protrusion, but these did not seem to relate to the presence of anomalies or to postoperative narrowing of the disc or hypertrophic changes. Those who developed recurrences had complete relief of pain following the initial operation for one to five years before symptoms of recurrence took place. After removal of the recurrent protruded nucleus, all were again completely relieved for periods of time varying from one month to five years.

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*Abstract of paper presented before annual meeting of the Mid-South Postgraduate Medical Assembly in Memphis, February 10-13, 1948.

†From the Department of Orthopedics, Ochsner Clinic, New Orleans, Louisiana.

After careful study of this series of seventy-five patients with proved protrusion of the intervertebral nucleus pulposus treated by laminectomy and removal of the protruded portion without spinal fusion, we believe that there is little or no indication for performance of the spinal fusion to supplement removal of the protruded nucleus. There is no way to determine prior to operation for removal of the protruded nucleus which cases may have persistent or disabling back pain or a recurrence of protrusion. The percentage of those who do have such trouble is so small that it does not justify subjecting all patients to the additional procedure of spine fusion.

Studies on the Mechanisms of Vascular Disease*

L. L. Waters, M. D.
New Haven, Conn.

The etiology, pathogenesis, and interrelationships of the various forms and manifestations of vascular disease have been a major interest of the Department of Pathology at Yale. The observations to be reported summarize certain phases of the work carried on over a period of years by many individuals.

The first phase of the work was morphological. It began with the observation that hemorrhages are frequently present in the vessel wall in arteriosclerosis. The source of these hemorrhages was found to be the enormous, almost angiomatous, congeries of vasa vasorum within the thickened, diseased intima. The origin of these vessels required consideration. Are they present in the normal intima? Or, are they formed as a part of the response reaction to injury of the intima? Detailed studies of normal and diseased vessels have supported the latter view. The knowledge of the vasa gained through these studies has been of value. It has been found that a large proportion (over 60 per cent) of acute coronary occlusions are the result of mural hemorrhages arising from intimal vasa. In the aorta and other large vessels, the origin of dissecting aneurysms can often be traced to the same source. Thus a new concept, that of mural hemorrhage, has been added to the proved mechanisms of arterial disease, of particular importance in the understanding of acute occlusion of vessels like the coronary arteries.

Scrutiny of the vasa vasorum has also provided information concerning the mechanism of infectious angiitis. It was found that the spread of the injurious micro-organism and the inflammatory process from a focus in a vein, to an accompanying artery was often along and through a network of vasa vasorum common to both.

Involvement of the artery from the adventitial side resulted in striking proliferative changes in the intima. This has broadened the viewpoint concerning etiological factors and the pathogenesis of intimal disease. The role of the vasa vasorum in the exchange and transport of materials within the vessel wall and in inflammations must be considered along with the more traditional concept of "imbibition" from the lumen of the vessel.

Following the discovery by Goldblatt and his associates that renal ischemia in animals leads to hypertension and to acute necrotizing changes in systemic arterioles, an intensive program of study of the etiology and pathogenesis of these arterial changes was begun.

Acute necroses of arterioles are present in man in conditions of severe renal insufficiency. They occur selectively in the systemic arterioles in typhoid and typus fever and often in tuberculosis. They are present in the coronary and other arteries in periarteritis nodosa, rheumatic fever, lupus erythematosus, serum sickness and other "allergic" states. They may be produced in laboratory animals by renal ischemia as has been mentioned, and by sensitization with foreign proteins. In all, the basic morphologic change is the same—fibrinoid necrosis of the media, with more or less fluid and cellular exudate. Thrombi may complicate the picture. Detailed study of these acute vascular lesions was undertaken not only with the hope of giving information as to their etiology and pathogenesis, important in themselves, but also with the objective of gaining information concerning the various forms of vascular disease in man designated as arteriosclerosis and also of hypertension.

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*Read before the annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 11 to 14, 1947.

*From the Department of Pathology, Yale University School of Medicine. Aided by grants from the Commonwealth Fund, the Office of Research and Invention, U. S. Navy, and the Life Insurance Medical Research Fund.

Study of these acute arterial lesions first led to the observation that dogs with ligated renal arteries develop widespread arterial lesions chiefly of the gastro-intestinal tract and heart. These animals live an average of three to four days, have severe symptoms during this period, develop hypertension and a rapidly rising blood non-protein nitrogen. In sharp contrast, nephrectomized dogs develop few arterial changes, live six to eight days, signs of intoxication develop later, there is no hypertension and the increase in blood non-protein is slow. If a nephrectomized dog is given injections of kidney extract, the pattern of response duplicates closely that of the dog with ligated renal arteries. Widespread arteriolar necroses are present. The nephrectomized dog, thus, has become a valuable animal for the test of biological materials for their arterial damaging properties. Of the tissue extracts tested, only those of kidney and testicle are followed by the occurrence of arterial necrosis. The active material in kidney extracts is associated with the protein fraction. There is evidence that it is destroyed by heat and by the action of strong acids. As the pressor substance "renin" is present in active fractions of kidney extracts and is destroyed also by heat and treatment with strong acid, the question of the identity of the renal pressor substance and the artery-damaging factor has been studied. Recent work suggests that injections of non-pressor fractions of kidney may result in systemic arteriolar necroses as well as injections of "renin" fractions.

The morphology of the acute arterial necrosis and myocardial lesions that follow bilateral renal artery ligation, or the injection of renal extracts into the nephrectomized animals have been studied in some detail. Quantitatively different forms, reproducing almost exactly the arterial changes that accompany renal failure, allergic states or infections in man have been found. Extensive myocardial necroses and inflammatory changes in subendothelial collagen are frequent.

Recently an advance has been made on the study of acute arterial lesions through the discovery that small concentrations of allylamine, $CH^2 = CH - CH^2 - NH^2$, introduced intravenously into normal dogs results in segmental necrosis of the coronary arteries. Arterioles of the retroperitoneal and body fat may also be involved, but to a lesser degree. Amounts of allylamine necessary to produce selective damage of the coronary arteries are compatible with the long survival of the experimental animals. Thus it has been possible to study the histogenesis and fate of acute coronary lesions. Great quantitative variation in morphologic detail has been observed. As with changes following the injection of renal extracts, the anatomical picture has reproduced many of the lesions appearing in spontaneous vascular disease of man. Of particular interest is the fact that with repeated injections of allylamine, obliteration of the coronary arteries may occur through a process of intimal proliferation.

In the allylamine injury of blood vessels, sensitivity is not involved. Lesions may appear within eight hours after a single injection. Allylamine even in large intravenous doses does not raise the systemic blood pressure.

The occurrences of lesions of the coronary arteries after allylamine has led to a series of investigations on the effect of such injury in the localization of particulate substances within the vessel wall. Recent experiments combining injections of India ink with those of allylamine make it clear that the carbon particles of the ink localize in and around the damaged areas. It has further been demonstrated that these particles are phagocytized by large mononuclear cells that accumulate beneath the endothelium in the region of injury. The parallel process of phagocytosis of lipids by subendothelial mononuclear cells in arteriosclerosis need only be recalled to establish the interest of these results. Injections of cholesterol combined with allylamine administration so far has demonstrated accumulations of lipid globules within the damaged arterial segments. At present, much remains to be learned regarding the transport and fate of this material.

An intensive search for unsaturated amines and related compounds in normal and diseased tissues is being made. It should be recalled in this connection that Eppinger and his associates first discovered these substances in the pus and the tissues of animals dead of experimentally produced infections.

There remains to be described an investigation of the nitrogen metabolism of animals with reduced renal function. This investigation is of central importance for the eventual understanding of the etiology of the signs and symptoms of the intoxication, of the structural changes in the heart and arteries that accompany this state, and of the role of the kidney in hypertension.

Dogs with reduced kidney function as measured by clearance tests have been prpared by surgical removal or destruction of a portion of kidney tissue. These animals remain well except for a slightly increased blood non-protein nitrogen with renal function reduced to 20 per cent of normal. If such dogs are fed high protein diets they rapidly become ill and exhibit marked increases in the non-protein nitrogen of the blood. It is impossible to account for forty to fifty per cent of the nitrogen intake by nitrogen balance studies. This is in contrast to the effects of meat feeding in normal dogs, which exhibit no ill effects and only a transient rise in blood non-protein nitrogen.

This striking disturbance in nitrogen balance is further demonstrated by placing amino acids directly into the upper intestinal tract of normal dogs, of dogs with reduced renal function or of dogs with bilateral nephrectomies. The normal dog survives without symptoms and has only a transient rise of amino acid levels in the blood. In the other two groups, with reduced or absent renal function, the signs and symptoms of severe illness appear quickly and death rapidly ensues. The amino acids of the blood of these animals is remarkably increased.

Observations on the nature of so-called "renal" hypertension have indicated types of protein intermediates possibly present in renal disease. It has been found that the vasoconstrictor action of subthreshold doses of adrennalin is potentiated by extracts of kidney tissue. Extracts of other tissues also have this property, as does the amino acid, tyrosine. Such potentiating substances may occur and persist in the body in association with renal insufficiency.

In summary, the anatomical and physiological studies presented lend credence to the concepts that follow.

The anatomical changes of the artery wall in response to injury are qualitatively alike in the conditions studied. These include the vascular necroses in various diseases of man, human arteriosclerosis, and acute arterial necroses in the experimental animal associated with renal ischemia and with injections of allylamine. Quantitative differences can be ascribed in large part to variations in the size of the vessel, in the intensity and duration of the injurious stimuli and to the progression of the resultant changes in the vessel wall.

The vasa vasorum are important in the exchanges of fluid and metabolites in the vessel wall. They proliferate in association with inflammatory processes in the vessel wall and thereafter render the vessels liable to mural hemorrhage, which may result in such disastrous events as acute coronary occlusion or dissecting aneurysms.

Necroses of the coronary and mesenteric arteries that follow injections of allylamine into normal dogs do not involve sensitizing procedures. Allylamine may provide a clue as to the mechanism of production of the vascular lesions associated with allergic states and with bacterial infections. Allylamine injury of the arterial wall provides a biological tool for the further investigation of the relationships of acute and chronic forms of vascular disease.

The structural, symptomatic and biochemical changes of animals with absent or reduced kidney function receiving increased amounts of renal or other proteins or amino acids suggests that the disturbed nitrogen metabolism of the body may allow the persistence of various toxic protein intermediaries which may in turn give rise to the clinical signs and symptoms of intoxication, the arterial changes, and the systemic hypertension. The studies on fractions of renal extracts, and of unsaturated amines in relation to arterial changes, the effect of administration of amino acids on the symptomatology, and the action of tissue extracts and tyrosine in potentiating the vasoconstrictive action of epinephrine, all provide leads to the types of protein intermediates concerned.

The Problems of Cancer and Cancer Clinics

H. A. GAMBLE, M.D., F.A.C.S.
Greenville, Miss.

THE AMERICAN SOCIETY for the Prevention of Cancer, the American College of Surgeons, the American Medical Association and its constituent state associations, and the U. S. Public Health Service have all combined forces in a concerted attack upon this dread disease. The problem of cancer is a challenge to the medical world which is being met by a frontal onslaught intended to awaken the medical profession as to its obligations and to educate the public as to the early manifestations of cancer and how to recognize them.

The State Medical Association, the State Board of Health and the Mississippi branch of the American Cancer Society are making a strenuous endeavor to have diagnostic and treatment clinics organized throughout the state so that everyone shall have an opportunity for early diagnosis and treatment.

At the present time, while there have accumulated a large mass of data relative to the etiology of its cause, we still do not know what causes it but there has been forced upon us the fact that always in its incipiency cancer is a local disease and can be cured if recognized early.

Statistics clearly prove that cancer is on the increase. During the year 1946 there were 184,000 deaths in the United States from this cause. It is true that a part of this increase was no doubt due to the increase in longevity. More people lived to reach the cancer age and also due to improvements in the methods of diagnosis more cases were accurately diagnosed and recognized. However, when all of these factors are taken into consideration they do not account for this mounting mortality rate in its entirety.

Scientists throughout the world are exerting every effort to determine what factors initiate the changes in cell growth which cause a normal cell to become a cancer cell.

We do know that the occurrence of cancer influenced by many factors. Nutrition is thought by some investigators to play a role in its occurrence but this has never been definitely proved. Undoubtedly sex does affect the involvement of certain organs. Only about 2 per cent or less of cancer of the breast occur in the male sex. This is due mainly to the influence of hormones. It at one time was thought that race played an important role but we believe that it has been conclusively shown that this is not the case except that it has been our observation that the darker skin races rarely have epitheliomas of the skin although the mucous membranes of these races are just as subject to malignant changes as those of the races. All races are subject to cancer and on the whole it is no respecter of persons or races.

After forty, begins the cancer age and age has a marked influence upon the development of all forms of cancer. The highest death rate from cancer of the breast is from forty-five to sixty-five years, cancer of the prostate after sixty years, epithelioma of the skin after fifty years of age.

Functional activity of an organ appears to play an important role. A higher percentage of women who have never borne children develop cancer of the breast than do those who have borne children.

It has long been recognized that various forms of irritation play an important role in the pathogenesis of cancer, as observed from chemical irritants such as are found in epitheliomas of the hands of briquet workers in England, and cancer of the scrotum in chimney sweeps. Coal tar has long been known as a carcinogenic agent and it has been proved that all hydrocarbons which possess carcinogenic properties contain a phenanthrene group.

Heat as an irritant is a well-known cause. Irritation from actinic rays of the sun or x-rays frequently cause cancers. Cancer of the breast we believe is often initiated by trauma, by functional disturbance or inflammation or a combination of these factors. Functional disorders of the endocrine system play an important role in the development of precancerous lesions such as chronic cystic mastitis and ultimately in the development of cancer of the breast.

There have been and are being carried out today more investigations along this line than in any other because of the fact that mice lend themselves to this type of investigation better than other animals. They have been

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*Read before the East Mississippi Medical Society, Meridian, Miss., January 22, 1948.

inbred to such an extent that certain strains have been developed in which 80 per cent ultimately develop cancer of the breast while other strains are notably cancer resistant. In one strain heredity has been shown to play an all-important part. With this strain it has been possible to cause carcinoma at will by the injection of estrogens. It has been clearly shown that so far as mice are concerned there are three factors involved in the causation of cancer of the breast: 1) an inherited susceptibility, 2) hormone stimulation, and 3) an active agent that is generally transmitted through the milk. At first it was not known what this third factor was until Biltner found that if baby mice were never allowed to nurse the mother they were practically immune to cancer, but if allowed to nurse only one time they are rendered susceptible to cancer for life. We cannot, of course, draw an analogy from this applicable to the human being, but it certainly opens up further avenues for speculation and study.

There is no question at the present time that estrogens play an important role in the development of cancer of the breast and chemically all estrogens are closely allied to the carcinogenic coal tar derivatives. I quote, "In all hypotheses one fact remains established, namely, the role of the estrogens in the pathogenesis of adenocarcinoma of the breast. This action is established in certain regions of the mammary gland where the hormone has been retained and has been enabled to exercise its proliferative action on the epithelium over a sufficient period of time to provoke cancer. For one cannot doubt that estrone filters into the glandular formation of the breast. In the human being it is known that colostrum contains a large quantity of estrone and this has likewise been demonstrated by cystic cancerous breasts."

So much for the etiology of cancer. The control and cure of cancer is what is of greatest interest to the physician and the public.

While a person may have inherited predilection for cancer it is primarily a purely local disease and can be eradicated. The cure of cancer depends upon its early recognition. The campaign put on by the American Cancer Society is daily bearing fruit. We are beginning to get these cases even on the day they are first noticed, and these can be cured.

The recognition of cancer in its early stages is as said above, all important. Symptoms vary with the region and with the location, but for it to be recognized early the patient himself must be educated up to what to look for and to be cognizant of the early symptoms of the disease. For instance, an indolent ulcer in the mouth is always suspicious. An ulcer of the lip that does not heal should be biopsied, skin lesions which are intractable to local treatment should be looked upon with suspicion. Abnormal discharge of any kind—from the bowel, the rectum, the bladder or vagina always bear investigation. The earliest symptom of cancer in most of these locations is blood, particularly if it is at the menopausal age in a woman, or in a man beyond fifty years of age it is always a danger signal and one which one cannot afford to ignore. While this symptom does not necessarily mean cancer it does mean that a careful examination should be instituted. The same applies to abnormal vaginal flow of any kind. Changes in one's habits of elimination, particularly occurring in the latter period of life, are sufficient to arouse suspicion. Indigestion, bloody vomitus, or coffee ground vomitus, pain after eating, should make one suspicious of the possibility of cancer of the stomach. Difficult deglutition, inability to swallow easily eructations of food before it reaches the stomach all are suggestive of a lesion of the esophagus. Expectoration of bloody sputum, loss of weight, does not have to mean tuberculosis but can just as easily be significant or cancer of the lung. A lump in the breast should never be ignored. The leading authorities claim that 60 per cent of all breast tumors are cancerous. Over a period of twenty-five years we have biopsied every breast tumor that we have seen and our records do not show as high a percentage of breast as this in all breast lesions. However, the breast is one organ of the body about which there has been more investigation made as to the etiology of cancer and from which we have gained most knowledge of cancer in general from these investigations. The main thing, however, is that the public should be cognizant of these early symptoms, which should be investigated. When cancer is found in its early stages it is always a local disease and can be eradicated.

It is the object of this campaign of education being carried on by these organizations (The American College of Surgeons, The American Medical Association, The American Cancer Society, the various state medical associations, and our State Board of Health) to educate the public as to how to recognize the early symptoms of this disease.

It is generally conceded that this can be accomplished by the general practitioner. He is the one who will see these patients first and the recognition of the earliest symptoms by him will do more to lower the heavy mortality from this disease than any one measure. If he will consider all patients who consult him who are within the cancer age group, that is who are above forty years of age, as potential cancer suspects and examine them carefully with this fact in view he will be surprised at the number of incipient cancers he will find and save from untimely death.

The cure of cancer depends upon its early recognition. Three times during the past week I have had this most forcibly impressed upon me. The first, a white lady with a sebaceous cyst of the scalp who was told this by her home physician and who added that he thought that there might be cancer associated with it. At operation a frozen tissue section of the lining membrane which was easily peeled off the wall except at one point which had to be excised, then upon examination microscopically was found to be malignant. The second, a negro woman, forty-seven years old, gave a history of spotting for one month and was examined by two general physicians in her home community and they referred her to the hospital for treatment. Externally the cervix was not eroded or ulcerated but there was found an early carcinoma of the cervix near the internal os. She was ane of those whom early operation could cure. A third case in the same week, age forty-four, gave a history of two months irregular bleeding. She was a nullipira with a normal appearing cervix. A diagnosis curettement gave positive findings of carcinoma. The uterus was removed and high up in the fundus was found a carcinoma not over one fourth inch in diameter. She also will be cured. A fourth case occurring in my private practice is a patient who for years had made a practice of having yearly health examinations. This time over a small area in her right breast the skin did not move as easily as it normally should and upon attempting to lift it there was a distinct dimpling as of shortening of the interlobartrabeculae. While no tumor could be defined she was advised to have a biopsy of this area made. The pathological report was carcinoma. A radical amputation was performed and she will not die of cancer of the breast. Truly the general practitioner is the most important link in the effort to recognize cancer early when it can be cured. I could enumerate case after case of early cancer being recognized by the general practitioner.

There is another and darker side to this picture. Out of a total of 488 cancers treated last year twenty died and many more of this number will ultimately succumb because they were not recognized early or were treated for a benign condition. A large proportion of cancers of the cervix are already in a hopeless condition when first seen. A large proportion of cancers of the colon are treated for colitis, dysentery, etc., until observation supervenes a year or more after initial symptoms.

Only 6 per cent of cancer of the stomach are cured simply because they did not have a thorough examination when the initial symptoms manifested themselves. Cancer of the esophagus is rarely recognized until obstruction develops and yet the early symptoms point an unerring finger to the site of trouble and it, today, is just as amenable to surgical extirpation as cancer in any other region of the body.

It is incumbent upon all of us surgeons, practitioners of internal medicine, specialists of all kinds and particularly the general practitioner to familiarize ourselves with the early symptoms of cancer and to be constantly on guard not to overlook them in our examinations.

I was invited here to assist in inaugurating a cancer clinic. I have presented this subject in a somewhat general way in order to emphasize the fact that cancer to be cured must be recognized early and that every one be he specialist, surgeon, internist, pathologist, roentgenologist, or general practitioner has a place to fill in every successful group of this character. I have asked Dr. Cave, who has been closely associated with us in the development of the cancer clinic with which I am identified, to present the details essential to such an organization. However, the following are the general principles laid down for our guidance by the American College of Surgeons:

1. ORGANIZATION. There shall be a definite organization of the service, and it shall include an executive officer and representatives of all the departments of the hospital concerned in the diagnosis and treatment of cancer. The services of a secretary and of a social service worker shall be available for the purpose of the clinic.

2. CONFERENCES. As an essential feature of the service there shall be regular conferences or consultations at which the diagnosis and treatment of the individual cases are discussed by all members of the clinic who are concerned with the case.

3. PATIENTS. Reference to the cancer clinic of all patients in whom the diagnosis or treatment of cancer is to be considered shall be either voluntary or obligatory in accordance with the vote of the medical staff or of the governing board of the hospital.

4. EQUIPMENT. In addition to the diagnosis and therapeutic surgical equipment which is required in every approved general hospital there shall be available an apparatus for x-ray therapy of an effectiveness which is generally agreed upon as adequate, and an amount of radium sufficient to insure effective treatment.

5. RECORDS. In addition to the records which are required in every approved general hospital, there shall be additional records of: a) details of the history and of the examination for cancer in different regions of the body, such as are indicated on the form records which are recommended by the Cancer Committee, American College of Surgeons; b) details of the treatment by radium or x-ray as indicated on the form records which are recommended by the Cancer Committee, American College of Surgeons; c) periodic examinations at intervals for a period of at least five years following treatment.

6. TREATMENT. The treatment of cancer patients shall be entrusted to the members of the staff of the cancer clinic except in cases in which adequate treatment in accordance with the collective recommendation of the staff of the cancer clinic can be procured otherwise.

COMPLEX SIMPLE FRACTURE

H. Earle Conwell, M.D.
Birmingham, Ala.

To the Editor:—Realizing that the term "simple fracture" as generally defined is thoroughly inadequate to describe the trauma received in many so-called simple fractures, I have added a new definition to the simple and compound fracture nomenclature, i. e., "complex simple fracture" (Key, J. A., and Conwell, H. E.: The Management of Fractures, Dislocations and Sprains, ed. 4, St. Louis, C. V. Mosby Company, 1946, pp. 41-43).

A complex simple fracture is a fracture which is not compound but which has received severe trauma to either or all of the surrounding soft structures, i. e., skin, muscles, blood vessels and nerves. The bony fragments usually are diplaced to a marked degree.

"Complex," defined by "Webster's New International Dictionary," unabridged, is as follows: (1) an assemblage of related things; (2) a whole made up of complicated or interrelated parts.

The complex simple fracture should be further described as to the type of bone injury, for example: complex simple fracture (transverse, comminuted, spiral or oblique, as the case may be).

Through personal contacts and correspondence with the personnel of the three National Fracture Committees (American Medical Association, American College of Surgeons and American Academy of Orthopaedic Surgeons) with reference to their opinions and the necessity for such new fracture term or definition, there was unanimous agreement that such a definition of complex simple fracture was a necessary one and should be generally accepted and used in its broad meaning.

I make an appeal to this new fracture definition or its relative equivalent be used by the members of the medical profession. Besides expressing more adequately the pathologic process in such type fracture it will mean improved records for the hospitals and convey a better description of the fracture to the insurance companies, compensation boards and other related agencies, thereby being of much help to the patient, the physician and every one concerned.

I will appreciate any opinion or suggestions relative to the foregoing.

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Melanoma

Because of its obscure origin and due to the fact that it is the most lethal of all neoplastic diseases, melanoma is an interesting subject.

In this discussion, the term "melanoma" will be used synonymously with malignant melanoma, melano-carcinoma, nevo-carcinoma, and melano-sarcoma. The term "nevus" will be used to refer to the common blue-black, hairy, or non-hairy congenital lesion which is usually called the common mole.

A melanoma is a new growth developing from cells distinguished by the ability to produce the pigment melanin. Melanoma is now recognized as a carcinomatous lesion. The so-called melanosarcoma is limited to those few cases which after trauma develop from a blue nevus or mongolian spot.

The general impression that melanoma is a rare disease is erroneous, for melanoma constitutes approximately 2 per cent of all malignant tumors and 20 per cent of all primary malignant tumors of the skin[1].

Melanoma is seen in persons of any age. Most cases occur between the ages of forty-five to sixty years. Only a few are seen before puberty; and when seen in infants or children, they are of low malignancy. The incidence rises at puberty because of the endocrine stimulus of the ovary, testes, and pituitary affecting the pigmentary function. The idea that endocrine stimulation may have an effect on development of melanoma is further borne out by the fact that in the pregnant woman the growth and spread of melanoma is very rapid. Melanoma is rarely seen in the castrate male or female[1].

Heredity is a factor in melanoma in that 50 per cent to 70 per cent of melanomas develop from pre-existing pigmented nevi.[1, 2, 3, 4 5, 6]. There is a hereditary tendency to moles as in other tumors of nevus origin.

Females are slightly more susceptible than males—55 per cent to 45 per cent[1]. The advent of pregnancy with the attendant endocrine stimulation may be the responsible factor.

It has often been noted that melanoma is rare in the North American Negro. That the disease is rare in the Negro is attested by the fact that only a total of seventy-nine cases has been reported up until February of this year[7]. This would indicate that in the Negro the mechanism of pigment control is less likely to become deranged. [7, 8] Melanoma in the Negro does not have a distinctive microscopic picture. The impression that melanoma in the Negro often arises from normal skin and not from a pre-existing nevus may be due to the fact that a pigmented lesion is more likely to be overlooked in the colored.

The etiology of melanoma is definitely linked with nevi, as from 50 per cent to 70 per cent of melanoma develops from a pre-existing nevus. As the occurrence of nevi is general, nearly everyone possesses a potential malignant tumor. The number of nevi varies with individuals from one to several hundred—the average being about eighteen[1].

Literally speaking, a nevus is a blemish or mark. A mole is a nevus which may consist of a deposit of pigment, hypertrophy of papillae, hair, or connective tissue.

A hairy mole is always congenital whereas a non-hairy mole is either congenital or acquired. Nevi are of several different types: macula, warty, hairy, papillary, linear, fatty, and blue. The blue nevus, a steel blue round flat circumscribed nodule, rarely becomes malignant. A true nevus is a tumor of the tactile end organ, and the cells are melanoblastic. Melanin production is considered a function of the nervous system. Certain reptiles such as lizards have developed the ability to change color with environment. Squid and cuttle fish have developed voluntary control of the ink sac. When melanoma develops from pigmented nevi, functional and morphologic differentiation takes place. Functionally, pigment is produced and morphologically the tactile corpuscle is formed. There seems to be sufficient evidence to support the neurogenic theory of the origin of melanoma.

Trauma plays a part in the development of melanoma. Of patients with melanoma, 30 to 50 per cent give a history of trauma to a pre-existing lesion.[1 2 3 4 5 6] The trauma may be in the form of chronic irritation from shoes, collar, belt, suspenders, or brassière. Infection and injury are common traumatic agents. The injury may be from the injudicious use of CO_2 snow, the electric needle, or caustics in the attempt to remove a mole. The man behind the needle or caustic may be a beautician, barber, patient, or doctor. In one series of cases 43 per cent gave a history of the use of the electric needle in treating nevi.[2]

That trauma is an important factor in the development of melanoma as emphasized by the fact that a large percentage of melanomas occur on the exposed parts of the body. The head and the extremities are the most frequent sites. In a compilation of a series of cases, the upper extremities accounted for 11 per cent; the lower extremities 29 per cent; both extremities 40 per cent; the head 35 per cent; and the rest of the body 25 per cent[2]. In some series, as high as 50 per cent of cases, the location was on the foot with a large percentage of these subungually[4].

There are several recognizable clinical types of melanoma.

First, the melanoma which metastasizes without noticeable change in a pre-existing congenital nevus.

Second, melanoma which begins in thin layers of pigment in a part of the skin in which no definite tumor is present.

Third, melanoma developing in apparently normal skin of hand or foot as a result of trauma. It may be that there are pre-existing nevi of microscopic size. There are, however, apparently verified incidences of melanoma developing from apparently normal skin[1]. There is a tribe of negroes in the Nile region which develop melanoma at the site of a thorn puncture of the foot.

Fourth, melanoma which recurs locally after excision and shows no inclination to metastasize.

Fifth, appearance of melanotic metastases in regional nodes with no evidence of primary tumor. This may represent metastases from internal origin.

Sixth, a long period of apparent cure from local incision of melanoma only to have distant metastases develop years after the local incision[1].

As the clinical types vary, so do the symptoms. The first noticeable symptom is usually an increase in the color or size of the pigmented mole. Later there may be bleeding and ulcerating extensive defects as do squamous cell carcinoma. The body may be riddled with metastasis, and the local lesion little changed. Occasionally the first symptom of melanoma will be regional adenopathy.

Any change in color, size, or consistency of a pigmented mole warrants a tentative diagnosis of melanoma. Melanoma is to be distinguished from the blue nevus which rarely, even if traumatized, gives trouble; the pigmented basal cell epithelioma; the deeply pigmented nevus; the small anginomatous lesion; nevus senilis; and especially from granulous pyogenicum. When diagnosis is doubtful, wide excision with competent pathologic study is indicated.

The results of the treatment of melanoma are far from satisfactory. In most series of cases, few have lived more than five years.[6] The reason for the low survival rate is that usually when a mole has become a clinically recognizable melanoma, the disease is in a relatively far advanced stage. In no other neoplasia does metastasis occur so early. There is an average of six months' delay in the patient seeking treatment. That is, the patient notices a change in a mole but delays on the average of a period of six months before seeking medical advice[2]. Often the treatment given is inadequate or even harmful. The lesion may be incompletely removed or simply an attempt is made to destroy the lesion with the electric needle. These procedures serve no curative purposes and may even stimulate the already most malignant of all neoplasms.

A mole which is even suspected of having undergone any change in color or size should be widely removed. If pathologic examination proves the lesion to be melanoma, regional lymph gland dissection should follow. In a clinically recognizable case, excision should be radically wide and primary closure not be anticipated. A plastic procedure should be part of the initial plan. If the lesion is situated on a digit or extremity, amputation followed by lymphatic dissection should be done.

Radiation therapy in melanoma is practically useless, as the neoplastic cells are as radio resistant as the cells of the tissue which contain it. To destroy the tumor it is necessary to give cauterizing doses which also destroy the tissue containing the tumor. In this respect, radio therapy is no more valuable than the actual cautery. Only about 2 per cent of melanoma shows any sensitivity to radiation[1].

Deaths from melanoma can be prevented. Many people feel that a pigmented mole should never be touched. This feeling may be the result of confusing the pigmented nevus with the blue nevus which rarely becomes malignant. Also, often the so-called "mole" is removed, and death follows. Actually a melanoma in an advanced state was the true lesion. As from 50 to 70 per cent melanoma develop from pre-existing pigmented moles, which for the large part are situated on the exposed parts of the body, the removal of moles will prevent melanoma. Once a pigmented mole is completely removed, it never recurs. It is impractical, of course, to attempt to remove all moles from everyone. It is not wise to subject to the hazards of melanoma a person having a pigmented mole on a part of the body which renders the mole subject to repeated trauma. It is best to completely excise the mole before puberty.

The danger of a pigmented mole on a part of the body which is likely to be traumatized, and the signs which call for immediate excision of pigmented moles, should be known to every layman as well as to every medical man.

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Congenital Hernia Of The Posterior Sheath Of The Broad Ligament

C. C. Hightower, M.D., F.A.C.S.
C. C. Hightower, Jr., M.D.
Hattiesburg, Mississippi

The old saying that "the female pelvis is the surprise box of human anatomy" has been demonstrated again.

Miss W., age 24, came to the clinic complaining with pain in the right pelvis for an indefinite number of years. Her menstruations were normal, there was no history of discharge, fever, or other symptoms which suggested an infection or endometriosis.

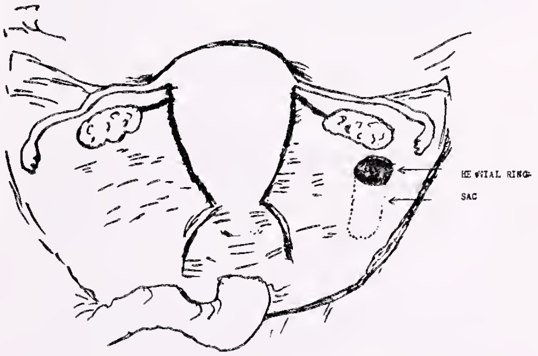
A general physical examination was negative. The hymen was found to be intact and a vaginal examination was impossible. On rectal examination a distinct, firm, cyst-like mass the size of a hen's egg was palpated in the right ovarian region. It seemed that an ovarian cyst was present beyond any doubt.

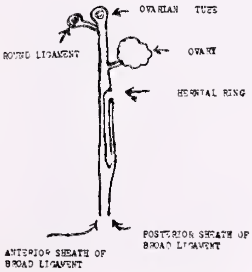
At operation no cyst was found and before the real trouble was discovered, we were chagrined beyond description at our woeful failure in diagnosis. After a more careful examination a hernial opening was found just beneath the right ovary in the posterior sheath of the broad ligament. The index finger was inserted and could be passed about two inches into the hernial sac between the sheaths of the broad ligament. It was evident from the firm and thickened hernial ring that the omentum or bowel had been impacted in the sac. Anaesthesia, and the Trendelenberg position resulted in reduction of the hernia.

The operation was completed by passing a linen purse string suture and thus closing the ring.

The patient made an uneventful recovery and has complained of no more pain.

According to an article by Masson and Atkinson only seven such cases have been reported. Unless some have been reported lately, this is the eighth reported case.

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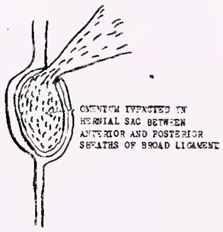
OMENTUM IMPACTED IN HERNIAL SAC BETWEEN ANTERIOR AND POSTERIOR SHEATHS OF BROAD LIGAMENT

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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ANNUAL MEETING

The annual meeting of the Mississippi Medical Association at the Robert E. Lee Hotel, Jackson, Miss., May 11, 12, 13 was very good. The registration reached about 440 which was very good compared with some of the meetings we have had in recent years. Dr. Paul Gamble of Greenville presided ably as president of the association. The scientific program was very good, especially the section on surgery. Dr. J. Rice Williams, the learned and the beloved, presided as speaker of the house of delegates.

The exhibits were quite good, both scientific and commercial. Dr. Dudley Jones filled his space to capacity with the scientific exhibits. He was born to do this good service for the association.

The past presidents of the association were well entertained by the past presidents of the Central Medical Society. Out of a total of twenty-four living past presidents, nineteen attended the state meeting.

The Fifty-Year-Club held its dinner on Tuesday evening at six o'clock with Dr. W. A. Evans of Aberdeen presiding. The club was duly organized with Dr. Evans as president, Dr. Will H. Frizell of Brookhaven as vice president, and Dr. W. H. Anderson of Booneville as secretary-sponsor. A luncheon of the Fifty-Year Club will be an annual affair.

The outstanding physician for the year was elected by ballot by the house of delegates. From a number of worthy men nominated, the great honor and distinction went to Dr. W. L. Little of Wesson. The next annual meeting of the association will convene in Biloxi, with Dr. B. B. O'Mara as the incoming president.

The house of delegates of the Mississippi Medical Association reaffirmed its stand on the four-year medical school at its last meeting in Jackson. The vote was unanimous for a four-year school. We have already wasted much good time. The nation is short of doctors and will be for fifteen to twenty years unless we have more medical schools or increase the capacity of the ones we have. Tennessee has three medical schools and the dean of the Memphis schools admits that it will take that state thirteen years to catch up on doctors. Mississippi is about fifty per cent short and with no medical school it will probably take us a hundred years. Many of our medical schools use much of their space and teaching for post-graduate work, for our own doctors and for doctors of other nations. Our nation must assume the medical leadership of the world and be the big brither—in every sense our nation must do this. It is time we establish a four-year medical school and quit our quibbling. The following from the **Southern Sentinel of Ripley** says the following:

THE NEED FOR A MEDICAL SCHOOL

A few days ago we read an article in **Life** magazine to the effect that each year over 2,000 qualified students who have completed their pre-medical education apply for admission to Columbia University medical school, and only 100 can be admitted.

The same day we read an article in the **Jackson Daily News** to the effect that the U.

S. Veterans Administration would likely locate a twenty-million-dollar hospital in Jackson, and if we had a four-year medical school there the location would be almost a certainty, as it would then be classed as a medical center. We read another article to the effect that several times as many apply for admission each semester to the Ole Miss two-year medical school as can be admitted. A few nights ago we heard former Governor Arnall, of Georgia, in a speech at Blue Mountain College, emphasize the need for more doctors throughout the country. He estimated the need at 68,000 more physicians than we have now.

The health authorities agree that Mississippi needs at least twice as many doctors as we have, and a large portion of those we have are past 60 and the number is rapidly diminishing. There are about two million people in the State of Mississippi. We do not have a medical school, except the two-year school at Ole Miss.

The greatest asset of any people is health. The greatest need of people is adequate medical service. The doctors we have are doing marvelous job, but they can just do so much and there is not enough to do the work that needs to be done. The recent session of the legislature appropriated many million dollars for different building programs, but they turned down the proposal to appropriate five million dollars to construct a medical school. The people of Mississippi should insist that they make this appropriation at the next session of the legislature.

DR. CALDWELL SUCCEEDS TO PRESIDENCY; DR. O'MARA PRESIDENT-ELECT

The Mississippi Medical Association May 13 named Dr. B. B. O'Mara of Biloxi president-elect.

Dr. R. B. Caldwell of Baldwyn was elevated to the presidency as the association closed its annual convention in Jackson.

Other new officers are Dr. S. E. Kety of Picayune, vice-president for the Southern district; Dr. O. G. Eubanks of Crystal Springs, vice-president for the Central District; Dr. J. C. Green of Tupelo, vice-president of the Northern District; Dr. J. G. Thompson of Jackson, historian; Dr. W. H. Anderson of Booneville, editor of the **Mississippi Doctor,** and Dr. Douglas D. Baugh of Columbus, associate editor.

Dr. Paul G. Gamble of Greenville, retiring president of the association, cited as an example of medical progress made during the past year establishment of a nursing school at the University of Mississippi, a state hospital construction program and state aid in medical education.

Re-elected were Dr. E. Leroy Wilkins of Clarksdale, treasurer, and Dr. T. M. Dye of Clarksdale, secretary. Dr. J. Rice Williams of Houston was designated speaker of the House emeritus.

New councilors elected were Dr. E. C. Parker of Gulfport, Ninth District, succeeding President-Elect O'Mara; Dr. A. V. Beacham of Magnolia, Eighth District, succeeding Dr. W. H. Frizell of Brookhaven; Dr. E. E. Ross of Hattiesburg was re-elected from the Seventh District.

Members of the council whose terms did not expire this year are Dr. J. W. Lucas of Moorhead, First District; Dr. L. L. Minor, Route 9, Memphis, Second District; Dr. M. Q. Ewing of Amory, Third District; Dr. W. H. Curry of Eupora, Fourth District; Dr. H. C. Ricks of Jackson, Fifth District; and Dr. Lamar Arrington of Meridian, Sixth District.

APPOINTMENTS

Governor Wright appointed the following physicians on the State Hospital Commission and the State Board of Health:

State Hospital Commission.—D. B. Anderson of Pontotoc, Dr. L. B. Austin of Rosedale, Syd Hopkins of Aberdeen and D. F. Grenberry of Laurel.

Board of Health.—Dr. H. K. McKinnon of Hattiesburg, Dr. S. E. Field of Centerville, Dr. Harvey F. Garrison Jr. of Jackson, and Dr. J. K. Avent of Grenada.

INDEX TO VOL. 25 DELAYED

Due to circumstances beyond our control the Index to Volume 25 of the MISSISSIPPI DOCTOR has been delayed and will appear in a forthcoming number.

OBSTETRIC DEMONSTRATIONS

Dr. Frederick W. Goodrich, Resident, Yale University School of Medicine, arrived in Mississippi Monday, May 3, for a series of demonstrations in x-ray pelvimetry. Dr. Goodrich was accompanied by Dr. James H. Ferguson, obstetric consultant, Tulane University and Mississippi State Board of Health. The demonstrations were held as a part of the joint consultation program being done in thirty-three south Mississippi counties by Tulane University School of Medicine and Mississippi State Board of Health.

GENERAL THERAPEUTICS

One of the most valuable books that could come to any doctotr's desk it seems to us is the yearbook of **General Therapeutics** for 1947. It is simply indespensable to the general practitioner. This book is published by the Yearbook Publishers of Chicago and it is edited by Oscar W. Bethea of New Orleans. We think Doctor Bethea is the South's greatest student in therapeutics. He is thorough in his study and very practical in application of what is known in medicine. He attended our medical school in Meridian many years ago. Tulane never had an abler instructor. Every doctor who practices medicine in this country should have this book on his desk or one similar to it. None better than Dr. Bethea's.

STATE OFFICERS TO MEET

The fourth annual conference of presidents and other officers of state medical associations will be held on Sunday, June 20, in the Gothic Room of the Sheraton Hotel, Chicago, Ill. The president, L. Howard Schriver, M.D., Bredgeport, Conn., will preside.

WOMEN TO MEET

Plans have been completed for the American Hospital Association Conference of Women's Hospital Auxiliaries in Atlantic City concurrent with the Fiftieth Anniversary Convention. Registration will be on Sept. 19 at the Traymore Hotel.

ANNOUNCEMENTS

The Guyton Clinic wishes to announce to the profession the association of Dr. Joseph B. Rogers in the practice of ophthalmology and otolaryngology, Oxford, Mississippi.

J. A. Majors Company takes pleasure in announcing the opening of their Atlanta store at 108 Edgewood Avenue, N. E., Atlanta 3, Georgia, telephone Lamar 8268. Complete stock of books on medicine, dentistry, pharmacy, nursing and the allied sciences on hand.

NORTH CENTRAL MEDICAL AUXILIARY

After a lovely coffee given in honor of the doctors and their wives by Dr. and Mrs. J. K. Avent in their home, the North Central Auxiliary was called to order by Mrs. H. K. Curry. Mrs. Curry opened the meeting with an inspiring talk on "The Responsibility of Our Auxiliary," followed by prayer.

There were ten old members and four new ones present, making an attendance of fourteen.

The program consisted of two talks: "The Blue Cross Plan" by Mrs. Edgar Giles and "Highlights of Conference" by Mrs. J. K. Avent, president-elect of the State Auxiliary. Both talks were enjoyed very much.

Mrs. E. A. O'Cain of Winona was appointed to replace Mrs. Caruthers as Hygeia chairman. Mrs. Giles was appointed chairman of the Post-War Planning committee.

It was voted by the Auxiliary to donate $25.00 out of the treasury to the cancer drive.

Mrs. Curry discussed the plan to honor the country doctor, after which Mrs. David Guyton read a poem entitled "The Country Doctor."

DR. LITTLE HONORED

In compliance with the plan of the American Medical Association to choose the general practitioner in the United States who has excelled in his profession and contributed the most to the welfare of his fellowman, the House of Delegates assembled at the annual meeting of the Mississippi State Medical Association in Jackson voted Dr. W. L. Little as Mississippi's candidate for the award. Dr. W. H. Scudder of Mayersville came next, and Dr. A. E. Bostick of Iuka was third in the physicians named to qualify for this honor.

RESOLUTION OF APPRECIATION FOR SERVICE AND CITIZENSHIP OF DR. W. L. LITTLE TO WESSON COMMUNITY

The Wesson Lions Club regards Dr. W. L. Little as an outstanding citizen of his community, state, and nation. In recognition of his service and leadership in this community for more than a half century these resolutions of appreciation are offered as a tribute to a truly great man.

William Lee Little was born near Rockport, district two, Copiah County, Mississippi, August 28, 1868. He attended the public schools of Copian County and received his medical education at Tulane University where he graduated with an M. D. Degree in 1889.

In 1883 W. L. Little was received into the Gallilee Baptist Church. In 1892 he was united in marriage to Annie Laura Ellis. Dr. and Mrs. Little have reared two sons and two daughters who follow their parents in community leadership and service.

Immediately upon graduation from medical school Dr. Little began the practice of medicine as a "country doctor." He rode horseback and drove a buggy over the mud roads of southern Copiah County, and no road was too muddy, no night too dark, and no man too poor, for Dr. Little to minister to the needs of any human being calling for help.

This man's position as a doctor is a matter of record in the archives of his chosen profession. Among his many professional honors these stand out: President Mississippi State Medical Association 1938; organizer of Copiah County Health Department; Illinois Central physician and surgeon for more than fifty years; charter member and former president Tri-County Medical Society; member Southern Medical Association; College physician, Copiah-Lincoln Junior College; former member Board of Trustees Baptist Hospital; and for fifteen years he was a member of the Mississippi State Board of Health.

It is not the purpose of these resolutions to extol Dr. Little as a physician; as a doctor the lives he has saved, the young he has brought into the world, and the pain he has eased bespeak his success.

For his Christian character, community leadership, vision and courage Dr. Little will live in the hearts and lives of Copiah Countians for scores of years after he has answered the call of the Great Doctor of all men.

Dr. Little was a guiding influence in the organization of Copiah-Lincoln Junior College; he was a leader in the dairy movement around Wesson—his son, Paul Little, now operates Willowbrook, one of Mississippi's fine dairies three miles from Wesson; his vision encouraged the truck farming enterprise of southern Copiah; he promoted the first all-weather roads constructed in Copiah County, in fact every worthwhile development of Wesson and its rural territory has felt the influence of this man of courage and vision.

As chairman of the board of deacons of the Wesson Baptist Church for many years, Dr. Little has served unselfishly. Under this chairmanship the deacons have recently initiated a building program to meet the needs of the Baptists of the community and college. He is not only a good Baptist, he is a staunch supporter of all churches and their pastors.

As an honorary charter member of the Wesson Lions Club, Dr. Little has continued to serve his fellow citizens in the only way he knows how to live—which is the ultimate in the true spirit of Lionism.

William Lee Little could have been a renowned city surgeon. He will not leave great material wealth but when he answers his final call he will hear "Well done thou good and faithful servant; you have riches beyond measure in a land where there will be no sickness or pain; you are not a wealthy surgeon but you are a truly rich 'country doctor', sit here in a seat prepared for the great."

PHYSICIAN HONORED

Friends from all over Bolivar County were present for a community gathering, which began at 2 p.m. and ended with a baseball game between Gunnison and Merigold, honoring Dr. H. L. Cockerham, Sr., April 16.

The Rev. Christy Scheveland, pastor of the First Baptist Church of Rosedale, and the First Baptist Church of Gunnison, formally opened the program by expressing the appreciation of all present for the physician's long service to his community.

W. D. Bell, superintendent of the Gunnison school, on behalf of the doctor's friends, presented Dr. Cockerham with a handsome leather traveling bag, and a check for more than $100 with instructions to "use them both for a vacation."

Hiram Lee Roberts, president of the Shelby Rotary Club, of which Dr. Cockerham is a member, presented him a leather dressing case to match his traveling bag. Following Dr. Cockerham's acceptance of the gifts of appreciation, a group of negroes from the neighboring churches, who wished to show their appreciation, too, sang several negro spirituals and folk songs.

Dr. Toward Lea Cockerham was born Sept. 5, 1881, in Amite County, near Liberty.

He attended the public schools of Amite County and was graduated from Gillsburg Collegiate Institute. He was graduated from Tulane Medical School in 1907, but was licensed to practice two years before graduation. He served his internship at Natchez Charity Hospital.

Upon completion of his internship he went to New Orleans as assistant instructor in clinical microscopy at Tulane. Following this service, he precticed in Crowley, La., for three years. He moved to Gunnison in 1911, and has lived and practiced there ever since.

He has been a trustee of the public schools of Gunnison since 1917, and president of the School Board for 17 years. He is an active 32nd Degree Mason, and a Shriner. He is a member of the Baptist Church of Gunnison, chairman of the Board of Deacons, and moderator of the Bolivar County Baptist Association. He is a member of the State, Southern and American Medical Associations.

He married Evelyn Spinks of Natchez in 1910. Four of their five children were present for the occasion. Dr. Lea Cockerham, Jr., of Biloxi, Odessa Cockerham of Gunnison, Mrs. Charles Maxey of Memphis and Mrs. Grady Phillips, who with her husband, Capt. Grady Phillips, and their infant daughter, just returned from Italy.

Another daughter, Mrs. R. C. Embry of Baltimore was unable to be present.

RESOLUTIONS

(Adopted by meeting of Southern Branch of American Public Health Association, New Orleans, April 12-14, 1948)

I

WHEREAS, on April 2 at Greenville, Miss., the three states of Arkansas, Louisiana, and Mississippi joined together under the name of "Middle South" in order to promote and advance the three-state aims industrially, educationally, and economically, and

WHEREAS, it was decided at that meeting that economic advancement can only result through improvement in the health, education and general well-being of the people of this area, and,

WHEREAS, one of the results of the formation of Middle South was the launching of a three-state health program sponsored by the health officials of Arkansas, Louisiana and Mississippi, in which the state will cooperate with private and public health organizations.

NOW THEREFORE BE IT RESOLVED by the Southern Branch of the American Public Health Association in annual meeting this date at New Orleans, La., that the aims and purposes of Middle South to provide a better way of life for its people through improved health, education and recreation be officially recognized, commended, and recommended to other solutions of health problems.

Respectfully submitted by Resolutions Committee:

Felix J. Underwood, M. D., *Chairman*
Milton E. Kossack
John H. O'Neill

II

WHEREAS, enabling legislation in the form of a concurrent resolution to make the United States a member of the United Health Organization has been introduced in the Congress and has already passed the Senate and is now pending before a committee of the House, and

WHEREAS, 27 nations have already joined in this movement which is so essential to the health, welfare, and peace of the world, and

WHEREAS, it is the opinion of the members of the Southern Branch of the American Public Health Association that it is essential that the United States speedily join in this meritorious effort.

THEREFORE BE IT RESOLVED, that the Southern Branch of the American Public Health Association with almost 1000 members present and acting at this annual meeting in New Orleans memorialize the Congress to speedily enact this legislation.

III

WHEREAS, the Southern States are now experiencing an alarming increase in the incidence of rabies and

WHEREAS, it is imperative that the official public health agencies responsible for the control of rabies immediately take the following essential steps to suppress this serious disease menace.

THEREFORE BE IT RESOLVED BY THIS ASSOCIATION, to urge

1. Impounding and destruction of all stray dogs.
2. Licensing or registration of all dogs.
3. Animal prophylactic anti-rabies vaccination of all dogs
4. In areas where rabies is present in wildlife (foxes) adequate control measures, such as trapping, shall be instituted
5. Health departments shall make adequate laboratory diagnostic facilities and human anti-rabies vaccine readily available
6. All cases of rabies in man and animals should be made reportable

Deaths

RESOLUTIONS

Whereas the Almighty God has removed from our midst on this earth Dr. Willis F. Cotten of McComb, Mississippi, the following resolutions are offered by the Louisiana-Mississippi Ophthalmological and Otolaryngological Society.

Willis F. Cotten, age 53, died at the Southern Baptist Hospital in New Orleans on January 19, 1948, of a kidney ailment after a long illness. He was truly one of the outstanding men in the eye-ear, nose and throat specialty in Mississippi.

Dr. Cotten was born in Franklin County, Mississippi, on February 22, 1895. He received his A. B. degree from Mississippi College, and studied medicine at the University of Mississippi and the University of Virginia, receiving his M. D. degree from the latter. He served his internship at the Tennessee Coal and Iron Hospital in Birmingham, Alabama, and his Eye, Ear, Nose and Throat training at the Grace Memorial Hospital in Detroit, Michigan. He was a member of the Pike County Medical Association, the Mississippi State Medical Association, the Southern Medical Association, and the American Medical Association. He was a fellow of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society, the American Academy of Ophthalmology and Otolaryngology, and the American Society of Ophthalmic and Otolaryngologic Allergy. He was certified by the American Board of Otolaryngology in 1942.

Dr. Cotten was a veteran of World War One, and was an active member and past commander of his local American Legion Post. He was a past president of the Chamber of Commerce, and a beloved leader in many fields of endeavor. He was a stock farmer of no mean note and produced many fine cattle and hogs on his model stock farm near McComb.

He was married to Miss Christine Gardner on June 19, 1928. He is survived by his widow, his mother and two brothers.

Now therefore, be it resolved that the Louisiana and Mississippi Ophthamological and Otolaryngological Society in regular session in New Orleans, Louisiana, this the 17th day of April, 1948, recognizing its loss does hereby express its regrets and extends its sympathy to the family of Dr. Cotten.

DR. H. L. BAUER

Services were held at the residence March 16 for Dr. Henry Louis Bauer, who died at his home Monday.

Dr. Bauer's life was one that spanned the history of McComb and of medicine in the state. He was one of the first eye, ear, nose and throat specialists in Mississippi and the South. He retired from active practice a year ago. He was born in Pike County.

In addition to extensive study in America, he studied specialized medicine in London, and Vienna.

He was a member of Presbyterian Church, a Mason, Shriner, and of several veterans' organizations.

He leaves his wife, Mrs. Della Norgress Bauer; two daughters, Mrs. Verner Holmes and Mrs. Robert Wright of McComb.

DR. DUDLEY STENNIS

Dr. Dudley Stennis, 72, died in Newton, February 26, after an illness of only a few days.

A resident of Newton for thirty-five years, Dr. Stennis had actively practiced his profession all those years. He worked diligently and long hours for many years, during the doctor shortage, and overtaxed his strength. He was a graduate of the University of Nashville, Nashville, Tenn.

The eldest of six children, Dr. Stennis was born at Moscow, Kemper County. He leaves his wife, Mrs. Lula Stennis, Newton; four daughters, Miss Martha Stennis of Montgomery, Ala., Miss Elizabeth Stennis of Vicksburg, Mrs. J. C. Rochelle of Franklinton, La., and Mrs. W. E. Bearden, Jr., of Columbus; three grandchildren; three sisters, Miss Mary Stennis, Mrs. Lizzie Clark, and Mrs. Annie McRae, all of DeKalb; and one brother, T. A. Stennis, DeKalb.

DR. ROZIER D. DEDWYLDER

Dr. Rozier D. Dedwylder, director of the Bolivar County Health Department for the past 28 years, died at the City Hospital in Cleveland February 20. He suffered a heart attack at his office the Sunday before. He was 65.

Dr. Dedwylder was born in Bergemot, Alabama and later lived in Meridian, Quitman, and Merigold before moving to Cleveland. He was a graduate of the University of Alabama and later did post graduate work at Tulane University in New Orleans. He practiced medicine in Clark County before he joined the State Board of Health in 1912 under a scholarship of the Rockefeller Foundation. On this scholarship he made studies of hookworm in the South and malaria and malaria control. He worked on the malaria control program in both Bolivar and Sunflower counties. He was one of the first doctors to use diphtheria antitoxin.

He is survived by his wife, Mrs. Ruby Tyrone Dedwylder, one daughter, Harriet Dedwylder, and two sons, Rozier and Wilkins Dedwylder, both of Cleveland.

DR. C. A. WATKINS

Dr. Charles Albert Watkins, leading Clay County physician for 42 years, died in a West Point, Miss., hospital after an illness of two years. He was 68.

The son of the late Charles Hinyard Watkins and Josephine Gurley Watkins, he was born and reared in Kemper County. He was graduated from the old Memphis Medical College in 1906, moving to Clay County shortly afterward to begin to practice. He was a member of the Mississippi State Medical Association and of the regional medical society comprising 13 North Mississippi counties. He was a Methodist.

He leaves his wife, Mrs. Theodocia Aycock Watkins; his daughter, Mrs. James T. Brand of McCondy, Miss., four sisters, Miss Fannie Watkins and Miss Ethel Watkins of Big Springs; Mrs. J. Thompson, of Meridian, and Mrs. W. W. McKay of DeKalb; his brother, Dr. Levin I. Watkins of Belzoni and one grandson.

DR. AMEDO TRAPPOLINI

Services for Dr. Amedo Trappolini, physician and Methodist minister of Ashland, were held April 18 in Holly Springs.

Dr. Trappolini was born in Felotrona, Italy, and took his premedical training there. He was graduated from the University of Boston School of Medicine. He received his theological training in New York and founded three churches, in Syracuse, N. Y., Jersey City, N. J., and Philadelphia, Pa. He lived in Elizabeth, N. J., 13 years and was house physician at the Alexian Bros. Hospital. He came South three and one-half years ago. He served as pastor at the Mt. Pleasant Methodist Church, and was a physician at Ashland. He was a Mason.

He leaves his wife, Mary Sorino Trappolini; two daughters, Alma and Quirnna Trappolini, all of Ashland, and a sister, Mrs. Silvia Borsini of Boston, Mass.

DR. J. Q. FOUNTAIN

Dr. James Quitman Fountain, 81, well-known Mississippi physician and legislator, died of a heart attack March 28 at Kennedy General Hospital.

He had lived here for the past six years after retiring from medical practice in Logtown, Pearlington and Bay St. Louis in Hancock County, and Gulfport, Miss.

A native of Columbia, Miss., Dr. Fountain received his medical degree from Tulane University in New Orleans.

He served as state senator from Hancock County for four years. During his legislative career, Dr. Fountain sponsored the bill that created the Mississippi Charity Hospital at Jackson.

DR. J. B. THIGPEN

Death ended the full and useful life of Dr. J. B. Thigpen, April 27, at his residence in Bay Springs after months spent as an invalid. Prior to his confinement at his home he spent sometime at Sanatorium. After returning home Dr. Thigpen was able to mingle with his friends, but a decline in health set in and since early last fall he was compelled to remain in his room.

Dr. Joe, as he was affectionately known throughout Jasper County and its vicinity, was born April 10, 1882, the son of the late William Rufus Thigpen and Amanda Morgan Thigpen. He received his elementary education at the Lake Como school, then attended Poplarville school and later went to Mississippi College. In 1905 he received his medical degree from Tulane University, New Orleans. He returned to Jasper County and practiced for several years at his home, Lake Como, then moved to Bay Springs where he had a large practice until ill health forced him to retire.

Dr. Thigpen is survived by his widow, Mrs. Victoria Medlin Thigpen, four sons and two daughters. The sons are Alvin and Stanford Thigpen of Big Springs, Texas. Both of these sons were by a former marriage of Dr. Thigpen to the late Mrs. Daisy Waites Thigpen; Joe E. and Jarmon Thigpen, students at the University of Mississippi; Mrs. B. V. Yelverton of Prentiss, and Mrs. Fred Ulf, Jr., of Gulfport, four grandchildren. A nephew, Ira Medlin, Jr., was reared by Dr. and Mrs. Thigpen as their own child. A sister, Mrs. Pearl Price also survives. A brother, Rufus Thigpen, died several years ago.

Recipient of numerous honors which came to him through his contacts and full life in the community. Dr. Thigpen was elected a director of the Bay Springs Bank in 1922. In 1931 he was elected its president which position he held at the time of his death. He served as colonel on staff of Gov. Hugh White; he served for years as member of the town council. He was a member of the Bay Springs Baptist Church, a Mason and a member of the Bay Springs Rotary Club.

DR. D. B. MARTINEZ

Dr. Diego Benigno Martinez, 49, former Biloxi practicing physician, died in New Orleans.

Dr. Martinez lived in Biloxi from 1937 to 1942 when he sold his beautiful Oak Park home and moved to Slidell.

Dr. Martinez attended Rugby Academy, New Orleans, and received his B. S. and M. D. degree from Tulane University, New Orleans.

Before coming to Biloxi he was a senior staff member of E. S. Magee Hospital and Presbyterian Hospital and associate professor of obstetrics at the University of Pittsburgh. His name appears in Who's Who in American Physicians and Surgeons and in Who's Who in the World of Medicine.

He was an honorary life member of the American College of Surgeons; a Fellow in Pittsburgh Obstetrical and Gynecological; and member of American Medical Associations, Pittsburgh Academy of Medicine, Mississippi State Medical, Coast Counties Medical and Southern Medical Associations. He was the author of numerous articles which have appeared in medical journals.

His hobbies included dogs and flowers. He had owned some fine pointers and Welch terriers. His Oak Park property was exceptionally attractive with unusually beautiful camellias, other flowers and shrubbery.

He is survived by his wife, Mary Frances Rhenberger Martinez; a sister, Mrs. Coleville Jackson, Gloster, Miss., and his parents, Mr. and Mrs. R. J. Martinez, New Orleans.

DR. E. N. BLOUNT

Dr. Estus N. Blount, Bassfield, died early Friday morning, March 19, in the Veterans Administration Hospital at Jackson after a long illness. He was 74.

Dr. Blount had practiced medicine and surgery for more than fifty years and during this time had witnessed a vast transformation take place in the rural section where as a young man he chose to minister to the sick and afflicted.

He stemmed from pioneer stock which migrated from South Carolina in the early spring of 1840. He was graduate of Tulane University medical school, member of the Bassfield Methodist Church, a Mason, veteran of the Spanish American War, and took an active part in the economic and cultural growth of his community.

He leaves many friends who speak his name with reverence and mark his untimely passing as one of the last of his kind, the country doctor who practiced his profession with patience, sincerity, sympathy and the other lofty characteristics of a cultured Christian gentleman of the old school.

He leaves his wife, Mrs. Leola Hathorn Blount Bassfield, two sons, Colonel Robert Blount, Medical Corps, Japan, and Captain Buford Blount, combat pilot, Air Corps, and one daughter, Mrs. Emogene Smith, Jackson.

DR. S. W. GLASS

Dr. Seaborn Wade Glass died on August 25 at his plantation home near Lyons. His health had not been good for some time, but the end came suddenly. Interment was at the family cemetery at Sallis, Miss., his birthplace.

Dr. Glass was the son of Mr. and Mrs. H. C. Glass of Sallis. He leaves his wife, Mrs. May Seay Glass, and a brother, David H. Glass of Kosciusko; two sisters, Mrs. Eva Ray of Bellville, Ill., and Mrs. Carrie Lee Allen of Sallis.

Dr. Glass resided in Coahoma County for 47 years. He was perhaps the best known man in the county. He graduated from the University of Tennessee College of Medicine in 1899 as a top honor student. He was honored by the Mississippi State Medical Association by being placed on the State Board of Health and served as its president. He was active in the tri-states at Memphis. He served two terms in the state legislature and one term as sheriff of Coahoma County. He was a member of the Methodist church.

Dr. Glass had the faculty of making friends and holding them by his loyalty. He was counted a most gracious host, a progressive citizen, and an able physician.

DR. M. L. FLYNT, SR.

Dr. Martin Luther Flynt, Sr., prominent Meridian physician, died April 18 in Riley's hospital in Meridian. Dr. Norman W. Cox officiated. Burial was in the Magnolia cemetery. He was 68.

Dr. Flynt was prominent in social and medical circles in this city and the state of Mississippi.

Dr. Flynt took up his residence in Meridian some 16 years ago, after having spent many years in Newton. Formerly he was the owner of the Newton Infirmary.

Dr. Flynt was well known in the medical world and held membership in the Lauderdale County, East Mississippi, and Mississippi State Medical societies, an honorary membership in the Theta Kappa Psi Medical fraternity, a charter membership in the Southeastern Surgical Congress, and he was among the first Mississippi Members of the American College of Surgeons.

Dr. Flynt was a devout Christian, having his membership in the First Baptist church where he had been a deacon. He was a Rotarian for 20 years in Newton and Meridian, and was a Mason and a Shriner. He graduated from the University of Tennessee in 1908.

He leaves his wife, Mrs. Louella Tillson Flynt of Meridian; a daughter, Miss Erma Lee Flynt of Meridian; two sons and daughters-in-law, Dr. and Mrs. Mayo Flynt and Dr. and Mrs. M. L. Flynt, Jr., of Meridian; a grandson, Roger Mayo Flynt, Jr.; a sister, Mrs. Ora Johnson of Gulfport; two brothers, Johnson Flynt of Hattiesburg and W. F. Flynt Methodist church here. Interment will be in the of Sanatorium.

DR. W. A. JONES

Dr. William Arthur Jones, 70, lifelong resident of Scott County died after a brief illness. He had been practicing medicine in Morton for the last 28 years. Before coming to Morton he practiced in Harpesville a year and in Pulaski 11 years.

Dr. Jones was a member of the Baptist church and was a Mason.

Survivors are: his wife, Mrs. W. A. Jones, Morton, two daughters, Mrs. O. W. Johansen, Gulfport, and Miss Mildred Jones, Jackson; four sons, Arthur Jones, Moss Point, Dallas Jones, Pelahatchie, Burford Jones, Pine Bluff, Ark., and Fred Jones, student at Mississippi Southern College, Hattiesburg; three sisters, Mrs. Art Goodwin, Harpersville, Mrs. Lane Underwood, Sebastopol, Mrs. Bay Sharp, Sebastopol; two brothers, Jess Jones, Sebastopol, and Dallas Jones, Jackson.

DR. E. H. WESSON

Dr. Egbert Hayes Wesson died February 29 at Kennedy Veterans Hospital in Memphis of a heart ailment.

Dr. Wesson, who was 58, had been ill for about a year. He was a graduate of the University of Tennessee School of Medicine and a veteran of World War I, in which he was a first lieutenant in the Medical Corps of the Marines.

Dr. Wesson had engaged in general practice of medicine in New Albany for 33 years until ill health forced him to relinquish his practice recently

He was born in Byhalia and had lived in New Albany most of his life, where his father, the Rev. E. H. Wesson, Sr., was pastor of the First Baptist Church during Dr. Wesson's youth.

He leaves his wife, Mrs. Costello Robbins Wesson, and a stepdaughter, Mrs. Jack Rieger, both of New

DR. JUDGE JAMES

Dr. Judge James, beloved physician of Ackerman and Choctaw County, died Monday, March 22, 1948, at the home of his son, Dr. S. Wesley James, in Grenada, Miss., after an extended illness.

Dr. Judge James was born at Alva, Miss., attended school there and at Bellefontaine, and later moved to Tomnolen, Miss., where he practiced medicine. He moved to Ackerman, Miss., in 1912 where he continued his practice until the time of his death. He was 66 years of age.

Dr. James attended Millsaps College, was a World War I veteran, served on the draft board for his county in World War II.

He was married to Miss Mabel Dominick of West Point, and two children were born to this union.

Dr. James was a graduate of University of Tennessee Medical School, post-graduate of Tulane Medical School. He served as County Health Officer for Choctaw County from 1940-48. He also was a member of the Mississippi Medical Association. He served as president of Old Winona District Medical Society. An honorary Rotarian, member of American Legion and a member of the Methodist Church.

He is survived by his wife, Mrs. Mabel James of Ackerman, two children, Dr. S. Wesley James and Miss Alice Katheryn James; two granddaughters, Mary and Martha Alice of Grenada; a brother, Dr. W. D. James of Midnight, Miss.; three sisters, Mrs. Pearl Cooper, Longview, Tex.; Mrs. Marie Skeen, Memphis, Tenn.; and Mrs. Eula Patridge, Winona, Miss.

DR. M. H. CLARK

Dr. M H. Clark, veteran Kemper County physician of DeKalb, expired in Anderson's infirmary March 9 following a lengthy illness.

Dr. Clark was born in Kemper County July 12, 1876, and had made his home near DeKalb all of his life. He was a member of the Methodist church and the Masonic lodge. He was a graduate of the University of Nashville, 1876.

The physician is survived by his wife, Mrs. Carrie Clark; two daughters, Mrs. Bertha Harbour and Mrs. Chandler Land, DeKalb; three sons, Wallace, Collins, and John Clark, DeKalb; three sisters, Mrs. Callie Dye, Arcadia, La., Mrs. Frances Bethany and Mrs. Nell Allen, DeKalb; three brothers, Dr. W. E. and Felton, Philadelphia, and Clay Clark, DeKalb, and five grandchildren.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

Archives of Dermatology and Syphilology—Vol. 55, No. 1, January, 1947.

PROTECTIVE SKIN COATINGS FOR THE PREVENTION OF SUNBURN. Matthew Luckiesh A. H. Taylor, H. N. Cole and Torald Sollmann, J. A. M. A. 130:1 (Jan. 5) 1946.

Erythema or burn as a result of exposure to natural sunlight is principally caused by ultraviolet energy in the spectral range 2,900 to 3,200 wavelengths. Dark red veterinary Petrolatum (Standard Oil Company of New Jersey) was found to be quite opaque to erythemal energy. The compound is not irritating and adheres tenaciously to the skin. Phenyl salicylate was also found to provide excellent protection against ultraviolet radiation when put up in a 10 per cent cream. Titanium dioxide is not a dependable protective agent. Zinc oxide is of definite value in preventing sunburn. Menthyl salicylate was not a particularly good agent, nor was "Sunex" ointment (Abbott Laboratories, Chicago) containing butesin, metaphen and oleic acid ester amide diethylamine in cold cream.

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THE ELIMINATION OF HUMAN REACTION-PRODUCING MATERIAL FROM HORSE-DERIVED ANTISERUMS: AN ELECTRICAL METHOD. Eugene Cardone, J. Lab. and Clin. Med. 31:829 (Aug.) 1946.

Treatment with immune serum has been associated with certain serologic reactions which have done much to discourage its use.

The aim, in the past, has been to eliminate all immunologically inert protein from serums in hope that the reaction-producing substance would go with them. This has been done by processes of purification and concentration.

The author describes an electrical process followed by six days of dialysis which he used to reprocess antimeningococcus serum by the water precipitation method.

The electric process frees the reaction-producing material and dialysis changes its form so that it is eliminated or inactivated.

These procedures eliminate from purified and concentrated horse-derived antiserum substances which cause immediate serologic reactions when injected in man without lowering the antibody potency per unit of protein nitrogen.

PEDIATRICS

RICKETTSIAL DISEASE OF CHILDHOOD. A CLINICAL PATHOLOGICAL STUDY OF TICK TYPHUS, "ROCKY MOUNTAIN SPOTTED FEVER," AND MURINE TYPHUS, "ENDEMIC TYPHUS." J. Cyril Peterson, James C. Overall and John L. Shapiro, Vanderbilt University School of Medicine, Nashville, Tenn. J. Pediat. 30:495-528, May 1947.

"Records of 26 children with tick typhus (Rocky Mountain spotted fever) collected over a period of fifteen years were studied. In 21 of the 26 instances the attack occurred during June, July, or August. The onset was abrupt with a severe unlocalized headache. Apathy and clinical evidence of some encephalopathy frequently followed. In a few children this persisted long after the other acute symptoms had subsided. A mild cerebrospinal fluid pleocytosis, chiefly of lymphocytes, and an increase in protein were frequent findings. The characteristic rash was not always noted first on the extremities although it soon became most marked there. Slight to moderate generalized edema was found in every patient. A leukopenia with polymorphonuclear leukocytes predominating was observed in the first week, especially marked in those with more severe infections. At the end of the second week a sharp rise in the leukocyte count coincident with improvement in the patient's condition was noted. The Weil-Felix test was usually positive by the eighth to tenth day. Fever fell by lysis on about the fourteenth day. Only 8 of the 26 patients were seriously ill and 4 of these died.

"Material from 7 autopsies of patients dying with tick typhus was studied. Acute arteritis was the most obvious lesion. Generalized endothelial lesions of the capillary bed associated with edema, accumulation of mononuclear cells and occasional fibrin thrombi were thought to be most significant and to explain all of the significant features of the clinical disease.

"Three of the tick typhus patients were treated with para-amino benzoic acid (PABA). Dosage was calculated to give blood levels of 30 to 60 mg. per cent. In young infants approximately 0.8 Gm. per pound per day was given in twelve divided doses. As a first dose three times the individual dose was given. When plain PABA was used, sodium bicarbonate also was given in order to maintain an alkaline urine. One of the treated children died shortly after admission. Both of the others had favorable responses and were fever-free earlier than the untreated patients.

"Records of 15 children with murine typhus (endemic typhus) collected during a five year period were also studied. This disease was also diagnosed most often in the summer. The onset was usually abrupt with headache, fever and malaise. However, the children appeared apathetic rather than seriously ill. No cerebrospinal fluid abnormalities were observed in 7 who had lumbar punctures. The characteristic rash usually appeared first on the trunk and became most intense on the abdomen. The leukocyte counts and fever curves were similar to those in tick typhus. The Weil-Felix test was usually positive by the tenth day although the complement fixation test with the specific rickettsial antigen did not become positive until the fourteenth day. No autopsy material was available. One patient was treated with PABA. He was fever free on the sixth day."

COMMENT: We felt that since this disease is becoming a little more prevalent in our state that it would be interesting to the profession to read this article.

VA CLINICAL PATHOLOGICAL CONFERENCE

A 58-year-old white male was admitted to the hospital 11/23/47 with a nine-day history of difficulty with urination.

Present Illness: About nine days before admission, the patient developed frequency and urgency of urination, but could pass only small amounts of urine at one time. He was catheterized the next morning, and the same trouble recurred that night. A catheter was again inserted, and this time it was left in place for 36 hours. Following removal of the catheter, the patient could urinate fairly well. However, it was necessary to catheterize him for the third time four days prior to admission. After this catheter was removed, the patient continued to pass only small amounts of urine at a time. He, therefore, was admitted to the hospital.

Past history and personal history were both non-contributory.

Physical Examination: A well-developed and nourished middle-aged white male who was ambulatory and did not appear ill. The only positive findings were the following:

(1) A small hydrocele, right.
(2) Prostate enlarged 2+, firm symmetrical, with obliteration of the median sulcus.
(3) A few tender hemorrhoids.

Laboratory Data: Red count 4,050,000; hemoglobin 18.5 gms.; white count 6,000, with 60% polys, 38% lymphs, and 2% eosinophiles. Kahn, negative; NPN, 39; bleeding time 1 minute, 28 seconds; clotting time 3 minutes, 20 seconds; Urinalysis, negative.

Intravenous pyelogram was reported as negative except for a small blurred with irregular outline. A chest film taken 9/10/47 was negative.

Hospital Course: At the time of admission, the patient was catheterized and 1180 cc clear urine obtained. The day following admission, catheterization produced 900 cc clear urine. No. 20 Foley catheter was left in place. The patient was put on penicillin, 20,000 units q 3 m., vitamin C 100 mg t.i.d, vitamin K 5 mg b.i.d. His temperature remained normal throughout his hospitalization.

On 11/26/47 transurethral prostatectomy was performed. The findings on cystoscopy were 2-3+ intrusion of the median lobe, 3+ intrusion left lateral lobe, 2+ intrusion right lateral lobe.

About 15 grams of prostatic tissue was resected through the McCarthy resectoscope. Near the conclusion of the resection, the patient complained of a "funny feeling" in the umbilical region. There was some tenseness, but no tenderness in the suprapubic region. A No. 20 Foley catheter was inserted and the bag distended with 30 cc saline. The patient was returned to the ward in good condition.

About five minutes later frank blood began to drain through the catheter. There were no clots noticed in this blood. Irrigation of the bladder continued to produce large amounts of fresh unclotted blood. The patient became cyanotic and the blood pressure fell to zero. Plasma and blood transfusions were started, and the patient was returned to the operating room.

Under local anesthesia, a suprapubic cystotomy was performed. There was no extravasation of urine or blood in the prevesical space. The bladder was distended with unclotted blood. Oozing was seen at the left anterior region of the bladder neck. A Pilcher bag was placed in the bladder neck and a gauze pack was placed behind and around this. The wound was closed in the usual fashion with a Malecot catheter in the bladder and a cigarrette drain in the prevesical space. During the procedure, blood transfusions were being administered continuously, and the blood pressure rose to 90/70. About ½ hour later there was so much blood oozing through the dressing that it was thought necessary to re-open the wound. When the sutures were removed, a generalized oozing was seen coming from the subcutaneous tissues and muscles. There was no tendency toward normal clotting. The prostatic bed was bleeding steadily, and was packed several times, both with gauze and with fibrin foam. Manual pressure was kept up for several hours, but the bleeding continued, and the patient expired at 4:15 p.m., 11/26/47.

The supportive therapy given during the operation was as follows:

Five indirect blood transfusions, 500 cc. each.

One direct blood transfusion, 500 cc.

1500 cc. plasma.

1000 cc. 5% glucose in saline.

2 cc. coagamen I. V.

100 cc. 10% calcium gluconate I. V.

20 mg. vitamin K I. V.

300 mg. vitamin C I. V.

One vial of topical thrombin, 10,000 units.

It was noted that blood drawn during the operation showed pink-tinged serum when allowed to settle. Examination of this serum revealed an orin content of 5.76 mg. %, and a hemoglobin content of 1.713 grams %.

State Board of Health

Felix J. Underwood, M. D.

SUPPLYING NURSES FOR THE HEALTH TEAM*

By Lucile Petry, Chief
Division of Nursing
U. S. Public Health Service

Effective health work today is nearly always a matter of teamwork. The basic health team is usually composed of doctors and nurses; often it also includes engineers, dentists, health educators, nutritionists, social workers, statisticians, physical therapists, recreational therapists and others. These teams work in many fields—hospitals, clinics, and offices—in communities, counties, cities, towns, states and even the nation as a whole.

The team idea is a departure from the traditional concept of the lone worker, such as that of the laboratory scientist at his solitary bench. The greatest modern example is the teamwork which gives us atomic energy. The development of the team idea is a sign of the times, demanded by the increasing complexity of life and its attendant problems. There is teamwork in research, shooting into the darkness of the unknown the broad beam of a searchlight rather than a single ray, revealing the vastness of that realm. There is teamwork in action programs, where problems are attacked on many fronts in coordinated fashion.

The organization of health activities today calls for teamwork. The bailiwicks of each team are less isolated from each other. Facilities are being unified. Hospitals serve as community health centers and may house the private physician's office, as well as the county health department. The integration of hospitals into a great system, with flow of patients from rural health center to urban medical center and with exchange of medical, nursing and technical personnel, is another example. The inclusion of psychiatric, communicable disease, and tuberculosis facilities in the general hospital is still another. Rehabilitation has moved into the hospitals and clinics. Bedside care is being included in public health nursing programs. Official and nonofficial nursing agencies are being coordinated, if not actually merged. The care of indigent and pay patients is often handled by single organizations in simple facilities. Everywhere we see preventive and curative aspects, physical and emotional aspects of care combined. Everywhere we see health facilities organized into larger and more generalized wholes. These larger units require team organization of personnel.

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*Presented at the Annual Meeting of the Mississippi Public Health Association, Jackson, Miss., Dec. 8-10, 1947.

Visualize the establishments of a new program: cancer control or mental hygiene, and see the team concept at work. These new programs begin as specialties practiced by individual physicians. As demand increases, the physician finds it necessary to delegate all but the strictly medical aspects of his work, and calls on qualified experts in various fields to assist him. The team is born; it grows, and each member develops new skills. The new approach proves its worth, and society demands community-wide services. The work of the team is broadened into a comprehensive health program.

In each new program, the need far outruns the supply of trained personnel. Efficiency is essential. Clearly, all skills must be utilized at their highest levels. In this team of experts, the role of the nurse takes on a greater significance. It is imperative that we have more nurses and that they be better trained to meet their present and expanding responsibilities.

Although the doctor or administrator calls the plays, the general strategy of the game is usually planned in advance with every member of the team contributing his or her competence. Advice is sought from consumers of health services and from community and civic leaders. The object of the game is better health for 145 million citizens of the U. S. A., one and one-fourth million of whom are sick in the hospital every day, and four and three-fourths millions sick at home. These two groups are to be restored to health insofar as possible, and the more fortunate majority are to be kept well according to ever advancing standards of good health.

The team varies in its performance and its promise of performance. The promise of the medical members of the Mississippi team, more than half of whom exceeded sixty years of age in 1945, stimulated you to action. The nurse team of the nation lacks essential skills for rural health work. Only a small percentage of student nurses have opportunity for practice in small communities and hospitals. Some have **only** that opportunity and cannot function on the modern team. Far less than half the nurses of the country have learned anything about psychiatric nursing, yet half the hospitalized patients of the country are psychiatric and every patient needs psychosomatic medicine and nursing. Nurses are afraid of tuberculosis nursing largely because of ignorance of safeguards. Such shortages in preparation cripple the team.

In considering the scarcity of nurses the stage of panic and name calling, of blaming this and that group, is past. Cooperative planning for the nurse supply is needed and should be carried on by nurses, doctors, hospital administrators, public health workers, and citizens. How many and what kinds of nurses are needed in Mississippi now? What is the estimated number needed when your new hospitals are built and your public health nursing program expanded? For purposes of planning, the crucial figure to be determined is the number of nurses to be graduated annually. You must produce enough nurses to allow for three factors:

1. Annual attrition or less from the profession. It is estimated, for example, that to keep a pool of 5,000 nurses constantly you should graduate 500 nurses annually.

2. You must graduate enough to eliminate the current shortage. If you are 500 nurses short now and if you allow ten years to catch up, an additional 50 nurses should be graduated annually.

3. You must provide nurses for estimated increases in demand due to growing population and expansion of hospital and other health facilities. If by 1955 you anticipate an increase in demand of 500 nurses, you must set a time (say five years) in which you will become prepared, and an additional 100 annual graduates should be provided for. (All of these are hypothetical figures).

For good planning, four figures are needed: 1. Current supply (this is now being determined). 2. Current need. From these two figures you compute the current shortage. 3. Annual attrition rate or loss from the professional pool. 4. Estimated future need on a given series of dates, say 1950 and 1960.

Let us discuss the computation of the second figure, "current need." You know the daily average number of patients in hospitals of all kinds in the state for last year. By multiplying the number of patients by a selected standard of hours of nursing service per patient day and dividing by the average daily hours of service furnished on a 48-hour week (or a 44-hour week), you determine the current need for hospital nursing personnel. Standard hours of care per day for patients—medical, obstetric, pediatric, etc.,—are available for your guidance. A judgment as to the suitability of these standards can be made after comparing them with existing practice in a variety of hospitals in the state. Another judgment must be made: What proportion of the needed care should be given by professional nurses, what by trained vocational or practical nurses, what by workers trained on the job? Applying these percentages to the total number of persons needed for care of hospital patients will give you the number of each type of workers needed.

These computations give you direct service personnel. The need for head nurses in hospital units, supervisors, and administrators can also be computed by standard formulas adjusted for suitability to your situation.

The current need for public nurses is usually computed by a desired ratio of public health nurses to total population. The ratio on January 1, 1947, was approximately one nurse to 13,000 people in Mississippi. If vacancies and new positions anticipated on July 1, 1947, were filled this ratio would be one nurse to approximately 6,000 people. You will need to choose the ratio you desire, perhaps 1 to 5,000, and compute the number of public health nurses needed. The ratio should increase as bedside care is added to the public health nursing functions. The supplementary use of practical nurses in home care of the chronically ill should also be considered in the provision of bedside care by public health nurses.

Estimates should also be made for nurses in industry, in doctors' offices, and in private practice. Adding all these provides a total —current need. The same process will yield estimates of need for 1950 and 1960.

Having determined the number of nurses needed for hospitals of all kinds, public health nursing agencies, doctors' offices, industries, and the private practice of nursing. you then know the size of the school plant which is required. This assumes you have some figures on flow of graduate nurses to and from state. This assumes that also you have some knowledge of the number of nurses leaving the profession annually. There has been no effort—and certainly there is no disposition—to combat the epidemic of matrimonial-itis which is depleting nurses ranks. You've just got to figure that Cupid factor in making your calculations!

After you know the size of the school plant needed to produce the number of nurses needed annually, you must decide what **kinds** of schools you want to produce nurses for our health teams. Fewer and larger schools would be preferable to more smaller schools. Larger facilities would be better able to afford comprehensive training in basic medical, surgical, obstetrical, pediatric, and psychiatric practices. These are the nurse's fundamental equipment if she is to be prepared to work anywhere after graduation. She should also have some training in tuberculosis. We hope, too, that nursing school and hospital instruction will encourage the preventive, positive health aspects, so that graduates may be ready for staff positions in public health nursing agencies.

Centralization of school facilities would make possible such intensive training. The use of fewer and larger schools is sound economically; fewer school plants require fewer laboratories, libraries, and faculty. So I would hope that Mississippi would have a small number of schools, connected with the major medical centers, preferably near a college or university, with accessible facilities for learning how to nurse in rural hospitals, psychiatric institutions, and tuberculosis hospitals. If possible, experience in public health nursing should be available. I would also hope for the establishment of a planned number of vocational nurses' schools. For graduate nurses who desire to enter specialized fields, I would hope for a large number of scholarships available for advanced study at various educational centers throughout the country.

Supervisors and administrators in public health nursing agencies and in hospitals, as well as teachers in schools of nursing, need additional preparation. You have information on your need for public health nurses; you will have it also on nursing faculty and nursing service personnel. By taking advanced courses in the fields of their choice—for example, public health nursing or surgical nursing or teaching—nurses become more skillful in administering and supervising those activities.

Preparation for the public nursing field is particularly fruitful at this time because new vistas are opening. We have a more enlightened grasp of the meaning of health, and we are anxious to make all the findings of modern research available to every community. As defined in the Constitution of the World Health Organization, health no longer means merely the absence of disease or infirmity. Rather, it is a state of complete physical, mental, and social well-being. The implications of the concept in terms of the public health work-load are gigantic.

Although it is encouraging to note that there has been a continuing increase in both enrollment and degrees granted in public health, our goal is not yet in sight. The increase is reflected mainly in the engineering sector, and there has also been an increase of more than one-half over the previous year in Master of Public Health degrees granted. The number receiving masters' degrees in public health nursing in the academic year 1945-1946 was three times as large as in any previous year, while the number receiving the baccalaureate degree or Certificate in Public Health Nursing increased only slightly. There were 136 nurse graduates with masters' degrees and 429 in the latter category. This, however, is only a drop in the bucket. We are not even replacing the annual attrition and so are losing ground.

I make a special plea for basic schools to provide preparation for staff nurses in public health agencies. Throughout the United States, at present there are only 21,499 nurses engaged in public health work. There are 3,683 positions vacant. There are 1,087 counties which have no nurses performing full-time public health work in rural areas. Of the public health nurse on duty, only 29 per cent have completed one or more years in an approved public health nursing program of study. When basic schools prepare staff nurses for public health agencies, supplementary education will not be necessary. At present there are only three undergraduate schools—Vanderbilt, Skidmore, and Yale—that are qualified to give the degree student full preparation in public health nursing. This is a serious omission in view of the pyramiding need for public health nurses. Graduate public health nursing programs in universities will then be truly advanced programs.

As more federal grants-in-aid are awarded to the states for expansion of health programs, there will be an urgent call for more and more nurses. They will be needed to staff the new health centers, the proposed cancer control for detection and diagnostic clinics, and the rapid treatment centers. The new mental hygiene program will also make demands on nurses. Here too is team work—the psychiatrist, psychiatric social worker, psychiatric nurse and clinical psychologist. To help meet this need, the Public Health Service is providing scholarships in a number of university schools of nursing and stipends to eligible graduates for study in the fields of mental hygiene and psychiatric nursing.

This concerted effort in the interest of better nursing shows that men and women of vision are banding together to realize more fully the high purpose of Florence Nightingale, in her words, to provide "the best chance of health" for "every human being." I can think of no better message with which to leave you than to repeat an inspiring statement made by the founder of modern nursing more than half a century ago:

"In the future, which I shall not see, for I am old, may a better way be opened! May the methods by which every infant, every human being, will have the best chance of health —the methods by which every sick person will have the best chance of recovery, be learned and practiced! . . . May we hope that . . . leaders will arise who have been personally experienced in the hard, practical work, the difficulties and the joys of organizing nursing reforms, and who will lead far beyond anything we have done."

Miss Nightingale's words are applicable today to the whole health team, and I leave you with her challenge!

The most important of all case-finding agencies . . in the fight against tuberculosis . . continues to be the practicing physicians. It is almost always true that the family physician has the first opportunity not only to ascertain the presence of active pulmonary tuberculosis but also to give battle for the cure of the afflicted and the safeguarding of the other members of the family from the tubercle bacillus.

PREVALENCE OF COMMUNICABLE DISEASES IN MISSISSIPPI

	March 1948	*March 1948*	*March 5-Yr. Avg.*
Bacillary Dysentery	1	21	341.8
Diphtheria	11	24	24.4
Influenza	169	1026	5836.2
Measles	334	74	2183.6
Meningococcus Meningitis	7	6	19.0
Other Forms Meningitis	7	3	9.8
Pellagra	1	2	95.0
Pneumonia	99	210	1540.6
Pulmonary Tuberculosis	180	141	136.6
Scarlet Fever	16	44	82.8
Smallpox	0	0	1.4
Tularemia	7	7	6.4
Typhoid Fever	2	2	6.0
Typhus Fever	0	6	4.4
Undulant Fever	5	7	5.6
Whooping Cough	16	48	492.4

Woman's Auxiliary

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MRS. AVENT SUCCEEDS TO PRESIDENCY

The members of the state organization, in one of the best attended sessions of the past few years, elevated Mrs. J. K. Avent of Grenada to the presidency, succeeding Mrs. S. B. McIlwain of Pascagoula. Mrs. Augustus Street. Vicksburg, long-time faithful and progressive worker in the organization, is president-elect. Ability, charm, and a superabundance of leadership characterizes these heads.

Except for the pre-convention board meeting on Tuesday afternoon, the session this year filled one important day, its associations and achievements richly worth remembering. The day started early with an unusually beautifully planned breakfast for the past-presidents, Mrs. Stanley Hill of Corinth, hostess. A spring-time garden in counterpart characterized the table in the sun-filtered Jackson Room of the Robert E. Lee.

The general session, with Mrs. McIlwain presiding, indicated a signal growth and accomplishment the past year. The president's goal to double the membership and interest in the organization was manifest in a record attendance, and an encouraging increase in endeavor.

The luncheon, annual highlight of the meeting, featured the twenty-fifth anniversary of the organization. Held in the Victory Room of the Heidelberg Hotel, Mrs. Sprolls of New Orleans, La., lent charming emphasis and inspiration to the occasion as guest speaker. Her subject was up to date and thought-provoking, as well as entertaining—"The Doctor Idolized, Specialized, Socialized." The last of the triad she delineated with a question mark and challenge to the group.

A lavish profusion of garden flowers made impressive arrangements down the luncheon table. Centering the speakers' section was a commanding work of art emphasizing the twenty-fifth anniversary motif. A great three-tiered cake elaborately wreathed in sweetpeas and fern was mounted by twenty-five candles in silver holders. The silver motif was repeated in a continuous pattern of floral charm down the tables.

The luncheon was followed by the post-convention board meeting, presided over by Mrs. Avent. Having been so closely associated with her husband in matters of medical legislation, she has rendered a special service to the Auxiliary in her own capacity, and now brings her experience and enthusiastic promotions into office for a year of lay information.

Doctors' wives were joined by their husbands in the evening for a dinner in the Victory Room of the Heidelberg Hotel. Preceded by a cocktail hour, the merry group dined cabaret style in the chief social affair planned for the visiting doctors and their wives by Jackson hosts. Mrs. Walton Lipscomb was the chairman of arrangements.

Councilors will be announced by the new president in the next issue of this section. Otherwise the complete roster of officers who will guide the destiny of the twenty-five-year-old organization this year are: Mrs. J. K. Avent of Grenada, president; Mrs. Augustus Street of Vicksburg, president-elect; Mrs. S. B. McIlwain of Pascagoula, first vice-president; Mrs. John B. Howell, Jr., of Canton, second vice-president; Mrs. C. C. Hightower of Hattiesburg, fourth vice-president; Mrs. O. C. Raines of Gulfport, recording secretary; Mrs. J. D. Simmons of Cleveland, treasurer; Mrs. J. Rice Williams of Houston, parliamentarian; Mrs. H. F. Garrison, Sr., of Jackson, historian; and Mrs. A. T. Nadeau of Grenada, corresponding secretary.

Mrs. John B. Howell, Sr., of Canton, Mrs. Hugh Johnston of Vicksburg, and Mrs. Henry Boswell of Sanatorium remain in their same posts as chairmen of committees. With them Mrs. J. Walton Lipscomb of Jackson will head the Public Relations Committee, Mrs. Richard H. Clark of Vicksburg, the Doctor's Day Committee, Mrs. H. C. Ricks of Jackson, Post War Planning, and Mrs. Stanley Hill of Corinth, Memorial.

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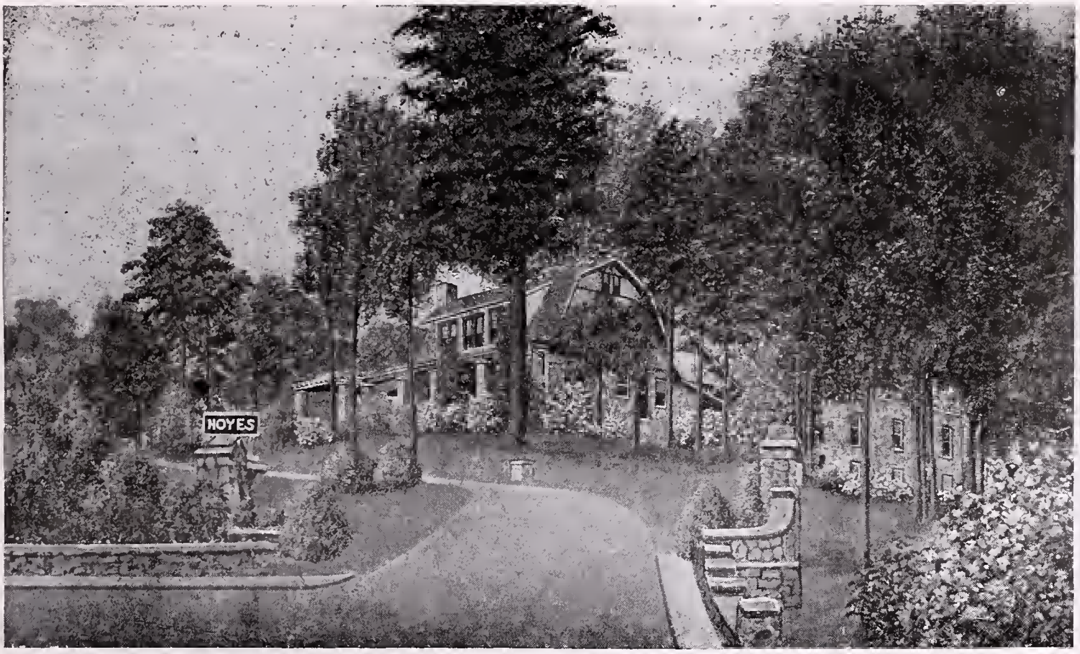

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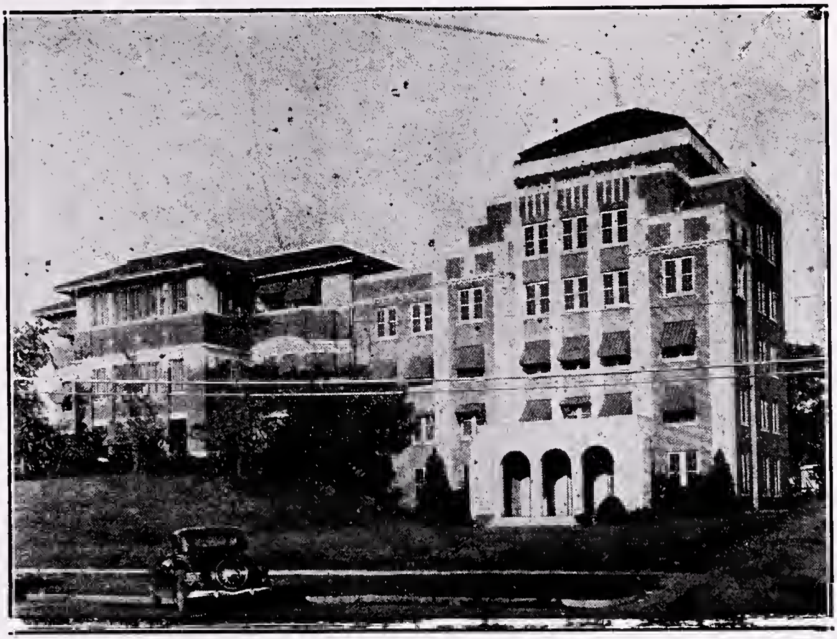

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